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THE INTERPRETATION OF THE RESULTS OF THE WASSERMANN TEST *

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The complement-fixation reaction for the diagnosis of syphilis, discovered by Wassermann, Neisser and Bruck, and coincidently by Detre, is, aside from the demonstration of *Spirochaeta pallida*, now generally accepted as the most valuable aid we have in the diagnosis of the disease and in the control of treatment. I have been impressed, however, with the evident misconceptions of many practitioners regarding the nature of the reaction, the percentage of positive results that may be expected in the various stages of syphilis and the exact significance of a positive or negative result. Many patients have been told on the strength of a single negative reaction that they were free from syphilis, while the diagnosis of syphilis has repeatedly been made on the presence of a plus-minus or plus reaction in the absence of a history of infection and of any symptom of the disease.

Such interpretations of the reaction are entirely unwarranted and have led to the infection of innocent individuals, on the one hand, and to great mental and physical suffering by those unjustly stigmatized as affected with this dreaded disease, on the other.

THE NATURE OF THE REACTION

The most recent investigations appear to prove that the Wassermann reaction is not necessarily a true antigen-antibody reaction but may be produced by certain lipotropic substances formed in the tissues of syphilitics during the progress of the disease. The researches of Landsteiner, Müller and Pötzl[1] and of Porges and Meier[2] first demonstrated that alcoholic extracts of normal as well as syphilitic tissues served as antigens, while those of Noguchi and Bronfenbrenner[3] proved that at least part of the active principles in the antigens used in the test are present in the lipoidal substances found in extracts from both syphilitic and non-syphilitic tissues of man and other animals. Noguchi,[4] however, has shown that with an antigen prepared from pure cultures of *Spirochaeta pallida* it is possible to secure complement fixation in certain syphilitic infections, especially in latent and tertiary cases, thus indicating the presence of true antibodies in the serum. That this reaction is in the nature of a group reaction is rendered probable by the work of Nichols and myself,[5] for we have found that alcoholic extracts of not only *Spirochaeta pallida* give complement fixation in certain cases of syphilis, but that the same results are often obtained with alcoholic extracts of *Spirochaeta pertenuis*, *Spirochaeta microdentia* and *Spirochaeta refringens*, while negative results have been uniformly obtained with antigens made from pure cultures of organisms like the *Bacillus typhosus* and *Spirillum cholerae*.

These researches would appear to indicate that when an antigen prepared from a syphilitic fetal liver, which is rich in spirochetes, is used, the Wassermann reaction partakes of the character of both a true antigen-antibody reaction and a reaction between the lipoids contained in the antigenic extract and the lipotropic substances present in the serum tested, while, with an antigen prepared from normal tissues, the reaction is between the lipoids and lipotropic substances only.

While numerous investigators have denied that better results are obtained with an antigen prepared from syphilitic tissues than with one made from normal tissues, Wassermann and his followers still maintain that the syphilitic liver extract gives superior results, and from my own experience I agree with this statement, believing that the explanation lies in the dual nature of the reaction when tissues rich in spirochetes are used in the preparation of the antigen. Indeed, in discussing this question, Citron[6] says that the reactions obtained with syphilitic and normal tissue antigens can hardly be compared and that "in important differential diagnosis, even this kind of extract (alcoholic extract of normal tissues) should not be considered as specific as luetic antigen."

In a recent paper, Keidel and Hurwitz[7] give the results of an investigation of the comparative value of normal and syphilitic extracts used as antigen by means of the Wassermann and epiphanin tests and conclude that comparative titrations show the superiority of the syphilitic extracts. They say that "syphilitic extracts contain, besides the non-specific complement-fixing substance or substances present in both non-syphilitic and syphilitic organs, certain other components which depend for their existence on the syphilitic poison in the specific tissue. These may be the *Spirochaeta pallida*, its virus, its decomposition products, or the metabolic products to which it may give rise in the tissue."

I think, therefore, that it may be stated that the Wassermann reaction, when an extract of syphilitic tissue is used as antigen, is often of a dual character,

* From the Bacteriologic Laboratories of the Army Medical School.

1. Landsteiner, Müller and Pötzl: Zur Frage der Komplementbindungsreaction bei Syphilis, Wien. klin. Wchnschr., 1907, xx, 1565.
2. Porges and Meier: Rolle der Lipoide bei der Wassermann'schen Syphilisreaktion, Berl. klin. Wchnschr., 1908, xlv, 731.
3. Noguchi and Bronfenbrenner: Biochemical Studies on So-Called Syphilis Antigen, Jour. Exper. Med., 1911, xiii, 69.
4. Noguchi, H.: Experimental Research in Syphilis, THE JOURNAL A. M. A., April 20, 1912, p. 1163.
5. Craig, C. F., and Nichols, H. J.: A Study of Complement Fixation in Syphilis with Spirochete Culture Antigens, Jour. Exper. Med., 1912, xvi, 336.
6. Citron, J.: Immunity, 1912, Philadelphia, p. 169.
7. Keidel and Hurwitz: A Comparison of Normal and Syphilitic Extracts by Means of the Wassermann and Epiphanin Reactions, THE JOURNAL A. M. A., Oct. 5, 1912, p. 1257.

consisting of a true antigen-antibody reaction and a non-specific reaction between lipoids present in the antigenic extract and lipotropic substances present in the serum tested. This dual action occurs only in some cases, for it has been shown that complement-fixation with pure cultures of *Spirochaeta pallida* occurs only in a certain proportion of cases giving a positive Wassermann test, and for this reason antigens prepared from such cultures are not as reliable as extracts of either syphilitic or normal tissues.

MATERIAL AND TECHNIC

In the laboratories of the Army Medical School, the Wassermann reaction has been in use since Nov. 1, 1909, during which time over 10,000 tests have been made. It has been the practice in the Army to control the treatment of syphilis by this reaction, so that many repetitions of the test have been made on a large number of individuals. In this way our technic has been continually checked up and a correct interpretation of the reaction in the various stages of syphilis has been rendered possible.

The method employed in this laboratory is really a combination of the Wassermann and Noguchi methods, following Wassermann in the employment of an extract of syphilitic fetal liver as antigen and in inactivating the serum to be tested, and Noguchi in using a human hemolytic system, the amboceptor consisting of the serum of rabbits immunized to human erythrocytes.

In reporting the tests, I use the terms: double-plus (++), indicating absolute inhibition of hemolysis; plus (+), indicating at least 50 per cent. of inhibition; plus-minus (+—), indicating any degree of inhibition below 50 per cent.; and negative (—), indicating complete hemolysis.

GENERAL RESULTS

The conclusions regarding the interpretation of the Wassermann test given in this paper are derived from the study of 10,000 tests made in the Army Laboratory in Washington. The total number of individuals tested has been 5,216, while 4,784 reexaminations were made, generally as a control of treatment. Of the 5,216 individuals tested, 2,905 gave a positive reaction and 2,306 a negative reaction. Of the total number, 3,516 were patients in whom the clinical diagnosis was syphilis or in which there was a clear history of infection (this includes latent cases); 1,544 were patients in whom the clinical symptoms or diagnosis were of some other disease; while 156 were normal individuals in whom the test was made during research work.

Table 1 gives the results obtained in the cases diagnosed as syphilis or in cases in which the symptoms were suggestive of that disease. As seventy-three individuals were tested in the primary stage at a period too early for the reaction to have appeared (one or two days after the appearance of the chancre) and as sixty-two of the secondary cases giving a negative result had been treated sufficiently for the reaction to have disappeared, it is only just that these cases should be deducted from the table if one desires a true statement of the results actually obtained with the test, and this has been done.

TABLE 1.—RESULT OF WASSERMANN TEST IN 3,381 CASES OF SYPHILIS

Stage of Disease	Number Cases	Number Positive	Number Negative	Per Cent. Positive
Primary	654	580	74	89.4
Secondary	1,434	1,372	62	95.6
Tertiary	465	404	61	86.8
Latent	778	509	269	65.4
Congenital	28	25	3	89.2
Parasyphilitic	22	15	7	68.1
Totals	3,381	2,905	481	85.3

INTERPRETATION OF THE RESULTS IN THE PRIMARY STAGE OF SYPHILIS

All cases have been considered as primary that have presented the initial lesion or that were tested before the development of secondary symptoms. Of 654 primary cases, 580, or 89.4 per cent., gave a positive result. It may therefore be stated that about 10 per cent. of primary cases do not give a positive Wassermann test. Table 2 gives the character of the reaction in the primary stage in 483 cases arranged according to the number of weeks since the appearance of the initial lesion.

In this table all plus-minus reactions are recorded as negative, although the plus-minus reaction in the primary stage, especially during the first and second week, is of some value, providing a suspicious lesion is present. It is best, however, to consider such reactions as negative and have the serum examined again within a week or two.

I believe that a plus reaction in the primary stage of syphilis should be interpreted as a positive reaction, as I have never observed a case in which a plus reaction afterward became negative, unless as the result of treatment. For this reason, a plus reaction during the primary stage of syphilis is, to my mind, as significant as a double-plus reaction, providing there is a clear history of infection or an initial lesion is present. In the absence of both, a plus reaction should not be considered as diagnostic and further tests should be made.

It is unnecessary to discuss the significance of a double-plus reaction, as it always means syphilis in this as in any other stage of the disease, if the few conditions in which such a reaction is rarely given can be excluded. It will be observed, from a study of Table 2, that a double-plus reaction occurred in 13.8 per cent. of the cases during the first week after the appearance of the initial lesion; in 22.1 per cent. during the second week; in 41.4 per cent. during the third week; in 53 per cent. during the fourth week, and in 61.5 per cent. during the fifth week. It is interesting to note that a double-plus reaction occurred in practically 14 per cent of the cases as early as the first week after the appearance of the chancre.

The significance of a negative reaction during the primary stage of syphilis is practically *nil*. As shown by the total results, 10 per cent. of the cases fail to give a positive reaction during this stage of the disease, and in Table 2 practically 20 per cent. failed to give a reaction. When it is remembered that the 483 cases analyzed in this table include only those that afterward developed positive reactions, the conclusion is justified that in practically 20 per cent. of primary cases the Wassermann test may be expected to give a negative reaction. It follows, therefore, that even repeated negative reactions during this stage of the disease do not prove the absence of syphilis.

INTERPRETATION OF THE RESULTS IN THE SECONDARY STAGE OF SYPHILIS

Of 1,434 cases presenting active secondary symptoms of syphilis, 1,372, or 95.6 per cent., gave a positive reaction. In 4.4 per cent. the reaction was negative and in many of these cases the test was repeated several times. Therefore, it must be admitted that some patients presenting active symptoms of the secondary stage of syphilis do not develop a positive Wassermann reaction, and in my experience practically 5 per cent. of the secondary cases have given a negative result. This small percentage proves the great value of the test in the diagnosis of syphilis.

A double-plus reaction, in patients presenting suspicious symptoms of this stage of the disease, is conclusive evidence of the presence of syphilis under the limitations already mentioned in discussing the interpretation of the test during the primary stage.

A plus reaction, while not of as much value in this stage as in the primary, is practically conclusive evidence when symptoms are present or when there is a clear history of a primary lesion, and other conditions giving a reaction can be eliminated. At least 80 per cent. of secondary cases give a double-plus reaction, but a plus reaction is frequently observed, even in patients presenting very active secondary symptoms, so that one must consider all the features in the case very carefully before ignoring the presence of a plus reaction.

A plus-minus reaction in patients suspected of being in the secondary stage of syphilis is valueless from a diagnostic standpoint, and one who makes a diagnosis of syphilis on the strength of such a reaction does a great injustice to the patient. In cases in which treatment has been administered, such a reaction may be the result, but before making a diagnosis of syphilis treatment should be omitted, the test should be repeated after an interval of two or three months, and if the reaction is still a plus-minus, the diagnosis of syphilis should not be made, in the absence of other symptoms.

A negative reaction in the presence of supposed symptoms of secondary syphilis is of greater value than at any other time, but even here it should be remembered that practically 5 per cent. of secondary cases of the disease give a negative reaction, and that this reaction may persist for weeks and months. A negative reaction persisting over several months and in the absence of further symptoms of the disease may be regarded as conclusive, while in cases giving an indefinite or no history of infection, and no symptoms, a negative reaction repeated at an interval of two or three months may also be regarded as proving the absence of syphilis, provided treatment has not been administered.

INTERPRETATION OF THE RESULTS IN THE TERTIARY STAGE OF SYPHILIS

Of 465 patients presenting symptoms of the tertiary stage of syphilis, 404, or 86.8 per cent., gave a positive reaction. The percentage of positive results obtained in this stage of syphilis by different observers has varied greatly, owing largely to the effect of previous treatment on the reaction. Many of our patients had received mercurial treatment but generally in an intermittent manner, and it is probable that such treatment did not interfere greatly with the reaction.

Our results show that practically 15 per cent. of cases of tertiary syphilis which presented symptoms at the time of making the test gave a negative reaction, a fact of great importance in interpreting the result of the Wassermann test during this stage of the disease.

A double-plus reaction in patients suspected of tertiary syphilis is diagnostic of the disease under the limitations already noted.

A plus reaction occurs in a larger proportion of tertiary than secondary cases, and therefore is of greater diagnostic value, and I believe that in patients presenting suspicious tertiary lesions it should have the same value as a double-plus reaction, with the same limitations.

A plus-minus reaction, unless permanent or treatment has been administered, is of no diagnostic value in patients presenting symptoms suggesting the tertiary stage of syphilis. Repeated examinations should always be made in such cases before the condition is considered syphilitic, but in the presence of a clear history and symptoms, a plus-minus reaction should not lead one to consider the case as non-syphilitic.

A negative reaction in patients suspected of tertiary syphilis is of value in excluding the disease only when it persists for several months and typical symptoms have not developed. Our results show that practically 15 per cent. of cases of tertiary syphilis, presenting symptoms at the time of making the test, gave a negative reaction. In the absence of typical symptoms and a history of infection, a negative reaction may be interpreted as indicating the absence of syphilis, provided no treatment has been administered.

INTERPRETATION OF THE RESULTS IN LATENT SYPHILIS

In this class were included all those cases in which no active symptoms of the disease were present at the time of making the test. Almost all of the patients had received more or less specific treatment and the majority were tested in order to determine whether the disease had been cured. Of this class of cases 778 were tested, with a positive result in 509, or 65.4 per cent. In most of the patients the only evidence of the disease was glandular enlargement and in many even this symptom was absent. The great value of the Wassermann test in the diagnosis of syphilis is well shown in the high percentage of positive results in this class of cases.

A double-plus reaction is not obtained so often in latent cases as in the active stages of syphilis, and when obtained is diagnostic under the limitations already mentioned.

A plus reaction in the absence of other symptoms, providing that there is a clear history of infection, I believe should be given the same interpretation as a double-plus reaction, especially when specific treatment has been administered for some time. In such instances a plus reaction is diagnostic of syphilis.

A plus-minus reaction in presumably latent cases, when there is a clear history of infection, especially if treatment has been administered, should arouse the suspicion that syphilis is present, but the test should be repeated two or three times before a diagnosis of syphilis is made. In these cases a plus-minus reaction generally means insufficient treatment, as most patients applying for a Wassermann test in the absence of symptoms have been treated for the disease at some period previously and are anxious to ascertain whether they are cured.

A negative reaction in cases suspected of being in the latent stage of syphilis has no value unless it remains

TABLE 2.—RESULTS OF THE WASSERMANN TEST IN 483 CASES OF PRIMARY SYPHILIS, ARRANGED ACCORDING TO THE WEEKS ELAPSING AFTER THE APPEARANCE OF THE INITIAL LESION

Week After Appearance of Chancre.	Total Number Examined	Negative, Number	Reactions, Per Cent.	Plus, Number	Reactions, Per Cent.	Double Plus, Number	Reactions, Per Cent.	Total Number	Positives, Per Cent.
First	65	47	72.3	9	13.8	9	13.8	18	27.6
Second ..	122	60	49.1	35	28.6	27	22.1	62	50.8
Third ...	123	44	35.6	28	23.7	51	41.4	79	64.2
Fourth ..	134	36	26.8	27	20.1	71	53.0	98	73.1
Fifth	39	8	20.5	7	17.9	24	61.5	31	79.4

consistently negative over a period of at least a year. Our statistics show that 35 per cent. of latent cases gave a negative result, and quite a large percentage of these cases afterward developed symptoms and the Wassermann became positive.

INTERPRETATION OF THE RESULTS IN CONGENITAL SYPHILIS AND PARASYPHILITIC DISEASES

Our experience has not been sufficient in this class of cases to permit me to make any definite statements, but it is generally admitted that in congenital syphilis about 90 per cent. of the cases give a double-plus reaction; in paresis nearly 100 per cent., and in tabes between 50 and 60 per cent.

INTERPRETATION OF THE RESULTS OF THE TEST AFTER TREATMENT

In the vast majority of the 4,784 reexaminations the test was made for the purpose of controlling treatment with salvarsan, mercurials or both. Our results have demonstrated the great value of the Wassermann reaction as an index of the efficiency of treatment and we have thus been able to trace the gradual disappearance of the reaction in treated cases and its reappearance in those instances in which further treatment was required. The use of the reaction in this manner has made possible the intelligent administration of both salvarsan and mercury and every patient suffering from syphilis should have the treatment controlled by Wassermann tests made at intervals of at least two months. Only in this way can justice be done the patient and the specific treatment of syphilis be conducted in an adequate and scientific manner. The occurrence of a double-plus or plus reaction following treatment should always be interpreted as meaning that more treatment is necessary. Granted that as most observers believe, the presence of a positive Wassermann reaction means the presence of living spirochetes, it is evident that when such a result is obtained the patient cannot be considered as cured, even though symptoms may have been absent for months or even years.

A plus-minus reaction after treatment, provided it is obtained on repeated examinations, should also be considered as an indication for more treatment, but when such a reaction is obtained treatment should not be given until the test has been repeated, unless symptoms are present.

A negative reaction after treatment is of no value as an evidence of cure unless it remains negative for at least a year and no symptoms have developed meanwhile. The limit of a year is arbitrary and founded on our experience in controlling the treatment in hundreds of cases of syphilis. We have observed but one relapse in a patient whose Wassermann reaction has remained negative for a year after the cessation of treatment. A luetin test should also be made, even though the Wassermann test is negative.

THE SPECIFICITY OF THE WASSERMANN TEST

Of the total 5,216 individuals tested in this laboratory, 1,544 were patients suffering from diseases other than syphilis, of whom ten, or 0.6 per cent., gave a positive result. Three of the positive cases were in patients suffering from tertian malarial fever, the blood being tested during the febrile stage; in all, the blood became negative after the subsidence of the fever. In one case the diagnosis was undetermined fever and the blood became negative during convalescence. The exact nature of the disease could not be determined in this instance. In three cases the diagnosis was tuberculosis; the patients recovered under specific treatment. In two of the cases a history of syphilitic infection was afterward obtained, while in the other such an infection could not be excluded. In three cases diagnosed as pityriasis rosea a plus reaction was obtained, which disappeared on the subsidence of the eruption. Other cases of this disease have been tested with a negative result, but the occurrence of the reaction in this disease should be noted.

It is well known that in some cases of leprosy, and in many of yaws, the Wassermann test gives a positive reaction, but these conditions can be easily eliminated clinically and for this reason do not render the test less valuable under ordinary conditions. A weak positive reaction has also been obtained in such diseases as carcinoma, sepsis and scarlet fever, but the number of cases reported is small; the reactions obtained were weak, and in most a latent luetic infection could not be excluded. I believe that a large percentage of positive results in non-syphilitic cases is certain proof of imperfect technic in the application of the Wassermann test or a wrong interpretation of the results obtained. These reports must be viewed with suspicion.

If the diseases in which the Wassermann complement-fixation test has occasionally been found positive can be excluded, a double-plus reaction is sufficient to enable one to diagnose the presence of syphilis. Under such conditions, I consider the test absolutely specific, whether symptoms of the disease are present or not, and whether there is or is not a history of infection.

Under the same conditions, and with a history of infection or the presence of clinical symptoms, a plus reaction should also be interpreted as diagnostic of syphilis.

A diagnosis of syphilis should never be made on the presence of a plus-minus reaction alone. Many normal individuals will give a plus-minus reaction at times and therefore such a reaction cannot be considered as having any more value than a negative reaction, in the absence of a history or symptoms.

A single negative reaction is of no value in excluding syphilis. Only when such a reaction is obtained on repeated examinations for at least a year after cessation of treatment can it be considered as evidence of the absence of the disease, and a luetin test should be made to corroborate the Wassermann result.

In the interpretation of a negative result the history of the patient, the presence of symptoms and the amount of previous specific treatment must all be carefully considered.

In conclusion, I desire to call attention to certain factors which influence the result of the Wassermann test, and which are of considerable practical importance.

INFLUENCE OF THE INGESTION OF ALCOHOL ON THE TEST

Nichols and myself[8] have shown that the ingestion of considerable amounts of alcohol may render a strongly positive serum negative, if the test be made within twenty-four hours after the alcohol has been administered, and in some cases the serum will give a negative reaction for as long as three days after the administration of the drug. The administration of from 90 c.c. to 120 c.c. of whisky to nine individuals having a double-plus Wassermann reaction resulted in the reaction becoming negative in all of them within twenty-four hours after the alcohol was taken. In one case the reaction did not become positive again until the end of

8. Craig, C. F., and Nichols, H. J.: The Effect of the Ingestion of Alcohol on the Result of the Complement-Fixation Test in Syphilis, THE JOURNAL A. M. A., Aug. 5, 1911, p. 474.

three days, while in the others the serum became positive within thirty-six hours.

These observations show that no dependence can be placed on a negative Wassermann reaction in individuals who have ingested considerable amounts of alcohol within twenty-four hours of the making of the test, and therefore a careful inquiry should always be made regarding the recent use of alcohol before collecting blood for the complement-fixation reaction.

INFLUENCE OF BACTERIA ON THE TEST

The serum for the Wassermann test should be collected under aseptic precautions, especially if it is to be kept for any length of time before it is tested, as I[9] have been able to show that certain strains of staphylococci and streptococci, when growing in normal serum, are capable of producing substances in the serum which may give rise to a positive result with the complement-fixation test for syphilis. These non-specific results do not occur in normal serums which are sterile, even though the serums be kept at room temperature for as long a period as a month, and while such false reactions are probably very rare in actual practice, the fact that they can occur as the result of bacterial activity is of enough importance to justify the use of aseptic methods in the collection of blood for the Wassermann test. This reaction is quantitative as well as qualitative, and it is only by the most careful attention to every technical detail that reliable results can be obtained.

For this reason the test should be made only in properly equipped laboratories by those who have received special instruction and who devote a large part of their time to this work. Under such conditions results will be satisfactory, but the interpretation of the test must always remain with the clinician. The laboratory report deals only with the result of the test, and it rests with the clinician to correlate this result with the clinical condition present.

VACCINATION AND LOCAL ANAPHYLAXIS

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During the recent small-pox epidemic in Western Pennsylvania, and particularly in Pittsburgh, which through the effective administration of the Department of Health was quickly circumscribed and subdued, the physicians of our vicinity had an unusual opportunity to observe large numbers of vaccinations. It has been estimated that in Pittsburgh about one-third of the population was vaccinated.

The ordinary vaccination with cow-pox creates little interest in the mind of the practicing physician, and the results are not carefully observed. There is one phase of this topic, however, which is very interesting, and while mention of it is made in the recesses of the English literature, I think that it is not presuming too much to say that it is not generally recognized, and that its explanation is almost unknown. A patient is vaccinated and after a slight redness or perhaps a small raised papule lasting one to three days the entire effect of the inoculation seems to have subsided, and the case is considered as one which did not take. On revaccination, say about two weeks later, we do get a "take," and we are surprised to find that the previous vaccination, apparently unsuccessful, now becomes active and goes through the same evolution as the revaccination. The lesion of the first vaccination usually does not develop as fully in any of its stages as that of the revaccination.

This observation was made long ago; we have no positive data on the frequency with which it occurs. Even if we could collect data on the frequency of its occurrence we should have to eliminate many other sources of error, such as technic of vaccination, dose and potency of virus, condition of skin, etc. After eliminating all external sources of error, we might then consider sensitiveness of the organism to the virus. Ordinarily this irregularity does not occur frequently enough in the experience of the average practitioner to make its impression on him, and if it has happened in his work he passed it by as an accident. On questioning physicians, I find, however, that the good observer can usually recall one or two such instances, and he admits that he thought it noteworthy at the time but had almost forgotten it since. In the general run of work, including the above-named sources of error, the frequency with which it occurs may be judged by the accompanying table. These figures include my own observations and those of my colleagues with whom I have discussed this subject.

	Ages	Vaccinated	Revaccinated	Local Anaphylaxis
Inst. C. H.	5-15	40	14	2 children.
Inst. N. H.	10-20	70	10	2 children.
Dr. D.	Adults	125	?	1 adult.
Dr. F. B.	All	75	?	1 adult.
Dr. R. J.	All	172	5	1 child.
Dr. F. S.	All	125	25	0
Dr. W. W.	All	200	50	7 or 8
Dr. S. L.	All	500	?	3
Dr. H. J.	All	65	15	1 child.

Judging by this table, its occurrence is not very exceptional. It seems more frequent in the cases not previously vaccinated.

CASES EXEMPLIFYING FORMS OF THIS REACTION

CASE 1.—D. P. Primary vaccination on left arm; slight local reaction, at ten days disappearance of all traces. Revaccination on tenth day on same arm, 3 inches from previous site; reaction marked. On fourteenth day, area of the first vaccination inflamed. Course of lesion about ten days, simultaneous with revaccination. Resulting scab smaller and fell off earlier.

CASE 2.—Reported to me by Dr. R. R. Jones. Primary vaccination no "take;" complete healing. Successful revaccination fourteen days later. Three days later reaction of primary vaccination, running its course in eighteen days. Course of revaccination more protracted, the scab still adhering at the end of thirty days.

A very important feature in this case is that the first vaccination was on the right leg and the revaccination on the left leg. The possibility of auto-inoculation is eliminated.

CASE 3.—Dr. S. First vaccination twenty years ago "took." Second vaccination nine years ago did not take. Third vaccination was made two months ago. Three days after inoculation there were evidences of a "take." Several days later the old scar of the vaccination of twenty years ago became red, inflamed, slightly elevated, and very itchy. This continued for about five days and subsided. The vaccination ran a usual course.

CASE 4.—Dr. B. Vaccinated in childhood successfully. Revaccinated at age of 20 successfully. Revaccinated again at age of 22 unsuccessfully. Shortly afterward (exact time not known) exposed to small-pox. Last vaccination scar became extremely sensitive and itchy for several days.

NATURE AND CAUSE OF VACCINATIONS

Extensive and painstaking studies of vaccination had been made by Bohn. Later, in 1903, von Pirquet pre-

9. Craig, C. F.: The Relation of Certain Bacteria to Non-Specific Reactions with the Complement-Fixation Test for Lues, Jour. Exper. Med., 1911, xiii, 521.

sented his "Zur Theorie des Vakzination."[1] Prior to that time it was assumed that the symptoms of vaccination were due to absorption of bacteria or their toxins. Von Pirquet saw that the body reacts with the microorganism only through the agency of the antibodies and presented the subject from his point of view, that of allergy. Inoculation with a strange protein, vaccine virus in this instance, causes the production of antibodies as protectors to the organism. These develop progressively, reaching their height in a variable period of time. At the end of that period, we then have the normal organism plus antibodies. The antibodies were created for the purpose of immunity; we may, therefore, say that the organism is in a state of altered immunity. This state of altered immunity von Pirquet termed "allergy." We may also say that the organism has become sensitized toward that particular protein, or has become hypersusceptible or anaphylactic toward it.

Let us suppose that after the organism has become sensitized to this strange protein by a full development of antibodies, another inoculation is made. The antibodies rush immediately to this point of inoculation and proceed to destroy the protein for which they are antidotal. The destruction of the protein substance by the antibodies is, let us say, a molecular disintegration. In this molecular disintegration certain by-products are let loose; these prove to be poisonous and manifest their presence by "the anaphylactic reaction," accompanied by local and at times constitutional manifestations. Von Pirquet showed that, after cow-pox vaccination, the incubation period of future vaccinations became shorter and the reaction milder, because of the development of antibodies from the primary inoculation. In the state of allergy if the antibodies are developed to such an extent that the incubation period is shortened, the resulting reaction is designated as "accelerated reaction." If the antibodies are developed to a much greater extent, so that the organism reacts immediately, the reaction is called "immediate reaction." So long as there is a sufficient "amount" of the antibodies to react immediately against the strange protein, we have immunity Thus, by inoculation with virus at certain intervals, we can keep up antibody formation and maintain immunity.

POSSIBLE EXPLANATIONS FOR THIS PHENOMENON OTHER THAN LOCAL ANAPHYLAXIS

Auto-Inoculation.—From the observations of von Pirquet and others, and from my own observations in many cases, it is known that auto-inoculation probably never or almost never occurs. If that could happen there are so many chances for its occurrence in a large proportion of the vaccinations that it would have become a recognized factor long ago.

Superinfection.—Finger's theory of superinfection cannot be unequivocally applied here. Finger, as quoted by Noguchi,[2] believes that in syphilis a trauma of the skin creates a spot of weakened resistance, and that the virus from a focus of activity wanders to the area of weakened resistance, creating a local area of reaction. The undoubted cases in which long-healed vaccine scars become active on reinoculation speak strongly against superinfection.

Neisser's Umstimmung.—According to Neisser, and recently Noguchi,[2] in syphilis and perhaps in other diseases, the skin itself may at times be abnormally sensitive to trauma, so that the site of a control area reacts simultaneously with the inoculation area. In the luetin reaction Noguchi believes that this *Umstimmung* reaction occurs exceptionally, if ever, and that his luetin vaccination is a manifestation of allergy.

Torpid Form.—Noguchi, in his work on the cutaneous reaction in syphilis, describes a torpid form of the reaction. "In rare instances the injection sites fade away to almost invisible points within three or four days, so that they may be passed over as negative reactions. But sometimes these spots suddenly light up again after ten days or even longer and progress to small pustular formations." This reaction von Pirquet, in his studies of vaccination, describes as the dormant form (*schlafende Keime*).

Moro's Bilateral Reaction.—Moro,[3] in his work on the cutaneous tuberculin reaction known by his name, observed that, in certain cases studied for control purposes, after rubbing one arm with tuberculin ointment and a similar spot on the opposite arm with pure lanolin, he obtained characteristic reactions on both arms. He explained this phenomenon as being due probably to the tuberculin reaching those parts of the cord which preside over the area of skin affected by the inunction, and assumed that the reaction was due to a reflex nervous influence on the vasomotors.[4]

The above-mentioned forms of local reaction and the explanations offered are all deserving of thoughtful consideration in this connection.

SIMILAR LOCAL REACTIONS

Those who have worked with tuberculin reactions are familiar with cases in which the first conjunctival instillation with tuberculin proves negative. Following this, when a cutaneous or subcutaneous injection is administered, we get a local reaction at the site of the injection, and we find that the conjunctiva also becomes inflamed. A similar reaction is observed when first one eye and then the other is used; at the second instillation we get a reaction in both eyes. It is also known that the conjunctiva of healthy persons can be sensitized to tuberculin, so that after primary negative results, reinoculation will show positive reactions.[5,6] These tuberculin reactions, it is almost universally conceded, are due to sensitization by the first inoculation and the second inoculation precipitates an anaphylactic reaction.

SUMMARY

All considered, in the light of our present knowledge of the subject, based on the evidences adduced, the best explanation for the lighting up of the first apparently unsuccessful vaccination, when the revaccination does "take," is that of local anaphylaxis.

The first inoculation results in the production of antibodies against the strange virus substance; it sensitizes the organism. At the second inoculation the virus, wherever deposited, is attacked by the antibodies, and in this attack certain "by-products" are let loose. These "by-products" act as poisons and produce the anaphylactic reaction. In this case the reaction is limited to local manifestations. In other instances when the dose is large, or when the protein and antibody are diffused throughout the organism, the anaphylactic reaction is constitutional.

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1. Von Pirquet: Vakzination und Vakzinale Allergie, Leipsic, Franz Deutick, 1907.
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3. Moro: München. med. Wchnschr., 1908, lv, 2025.
4. Patterson: Arch. Int. Med., 1909, iii, 301.
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THYMIC TRACHEOSTENOSIS AND THYMUS DEATH, WITH REPORT OF CASES*

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To the five cases of thymus hyperplasia which I have reported,[1] I wish to add two others. In the following discussion, I shall refer sometimes to the cases previously reported.

REPORT OF CASES

CASE 6.—Miss B. M., aged 41, suffering from an advanced exophthalmic goiter for three years, was extremely emaciated and had a marked exophthalmos. Stellwag, Graefe and Moebius symptoms were present. Pulse-rate was 88 and extremely irregular. Many of the heart-beats were not transmitted to the radial artery. The heart was enlarged. The enlargement of the thyroid gland affected both lobes and the isthmus. The right lobe was larger than the left, was irregular in surface and very hard in consistency. The inferior pole of the right lobe extended partly behind the sternum. Intense vascular symptoms, thrill and systolic murmur were present over the thyroid gland and in both supraclavicular spaces. Percussion showed a marked dulness over the sternum, extending about 2 cm. beyond each sternal edge, and fusing below with the area of cardiac dulness; no sonority between this dulness and the cardiac dulness. There were numerous ganglions along the carotid on both sides. Tremor was present. Perspiration was profuse.

The blood-examination revealed the following:

Blood-pressure	138	
Hemoglobin	78	
Reds	4,250,000	
Leukocytes	7,400	
Polynuclears	67.8	per cent.
Small lymphocytes	28.6	
Large lymphocytes	3.2	
Eosinophils	0.4	

Diagnosis, advanced exophthalmic goiter with probable thymus hyperplasia.

Patient was kept in the hospital for medical treatment and rest for two weeks and she improved so much that she seemed in good condition to stand a pole ligation. Ligation was performed on both superior poles under local anesthesia. During the operation, the patient complained greatly of pain and asked for a few drops of ether, which were given. Operation lasted twenty minutes. During operation, she showed a general tremor, as if shivering from cold. While the suture of the skin was being made, patient had a collapse. Pupils became dilated, patient made six prolonged inspirations and then pulse stopped. She was dead. Oxygen, massage of the heart, intravenous transfusion were useless.

Necropsy.—Lungs were normal, no thrombosis in the pulmonary vein. In the superior anterior part of the mediastinal space, an enormous thymus was present, composed of three lobes; both lateral lobes covering entirely the anterior surface of the pericardium (Fig. 1), the left lobe measuring about 11 by 6 cm.; the right lobe 13 by 7; the middle lobe 4 by 2 cm. The maximum of thickness in places was 2 cm. The thymus gland was not weighed because it was left *in situ*. The thyroidea ima veins were very large. They formed two different trunks. The lymphatic glands on both sides of the neck were highly developed, being small, round and hard. The thyroid gland showed in its capsule large and numerous blood-vessels. It had the form and size described in the physical examination. The heart was larger than normally. The right chamber was slightly enlarged, but neither chamber contained blood. The heart seemed to be contracted. The thickness of the wall of the left ventricle was 2.5 cm. The thickness of the wall of the right ventricle was 0.5 cm. Trachea was not compressed. The abdomen showed nothing special. Microscopic examination of the thymus showed nothing of importance.

CASE 7.—July 10, 1912. Female baby, 7.5 pounds, delivered by Dr. Rogers, with forceps. The babe required no efforts at resuscitation, breathing at once and crying lustily and was apparently normal and treated as such. The ordinary cyanosis at birth was present and passed off in the ordinary period of a few minutes' time.

At 2 p. m. the baby had what was described by the nurse as a choking spell. It turned blue, seemed to have difficulty in getting its breath, and gasped for breath. This spell yielded to the ordinary treatment of the nurse for cardiac and respiratory failure, namely, suspension by the feet, flagellation of the buttocks and splasing of cold water over the bare thorax and body. This attack lasted only a few moments and the babe again appeared to be all right, and was placed in the nursery with the other babies. About 8 p. m. a second attack occurred, more profound and serious; baby again turned blue, gasped for breath and "moaned" as the nurse said, in a peculiar way, heard only once before in her experience, in the case of a baby that died a few hours after birth from the so-called persistent patent foramen ovale. A whistling sound on both inspiration and expiration grew fainter and fainter, and in spite of efforts at resuscitation the baby died. This attack lasted about fifteen minutes.

Percussion of the thorax showed a dulness over the manubrium sterni, fusing downward with the cardiac dulness. It extended 2 cm. beyond the left sternal edge and 2.5 cm. beyond the right sternal edge (Fig. 2). The heart dulness extended downward to the sixth intercostal space, 0.5 cm. from the right sternal edge and 0.5 cm. from the nipple. Above the episternal notch no resistance was felt.

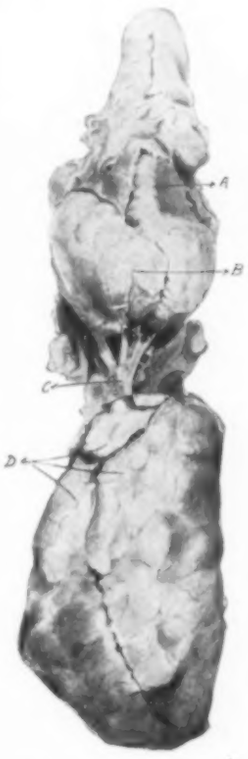

Fig. 1—Case 6.—*B*, thyroid gland with *A*, its pyramidal process; *C*, ima veins; *D*, middle and lateral lobes of thymus. Note that thymus covers the pericardium entirely.

Fig. 2—Case 7.—Results of percussion of the thorax after death. Large area of dulness in middle portion of the thorax, fusing downward with the cardiac dulness and extending upward to both clavicles and incisura sterni. Liver dulness normal for a new-born.

* Read before the Columbus Academy of Medicine, Oct. 14, 1912.

1. Crotti, André: The Roentgen Ray in Intrathoracic Goiter and Thymus Hyperplasia, THE JOURNAL A. M. A., Jan. 11, 1913, p. 117.

The opening of the thorax showed that the outlines made by percussion were exact. There was an enormous thymus located between the heart and the thyroid gland. The thymus occupied the entire upper part of the mediastinal space (Fig. 3). It was more developed toward the right side and pressed the heart downward and the pulmonary vein, aorta and superior vena cava strongly backward against the spinal column. The division of the thymus into its two lobes was not apparent; it formed a uniform mass having a transverse diameter of 5 cm., and measured 4.5 cm. in length and 2.5 cm. in thickness. After dissection, the windpipe was found compressed and flattened in the thoracic portion between the brachiocephalic trunk and the left common carotid. Section of the heart showed a patent foramen ovale with a semilunar membrane closing, in greater part, this foramen.

Death in this case was certainly due to an abnormal enlargement of the thymus. The partly patent foramen ovale does not explain this sudden death, because the child was all right before and between the dyspneic spells; the color of the baby was absolutely normal and there was no difficulty in breathing.

THYMUS HYPERPLASIA IN CHILDREN

In children what might be termed a latent thymus hyperplasia may exist for a longer or shorter period of time. Such cases do not come, as a rule, under surgical jurisdiction. They are seen by the family physician, who finds the child in poor general condition and suffering from some vague respiratory symptoms. The physician may or may not connect these symptoms with thymus hyperplasia; but even if he makes a correct diagnosis, the parents will never consider an operation until more decided dyspneic symptoms are present. Sometimes sudden death is the first symptom which reveals this latent form of thymus hyperplasia, and in the majority of cases this condition is revealed only at the autopsy. To-day, as we know a little more of this pathologic condition, I believe that this fulminating form of death without any prodromic symptoms is rare. As a rule the learned physician will find in the history of the case a few symptoms which will reveal the presence of the hyperplastic thymus. As in Bright's disease, there are in thymus hyperplasia some "minor symptoms" which will lead the physician to a correct diagnosis, and it is because such symptoms have not been carefully observed that the diagnosis of thymus hyperplasia is not made; as a result, the child is found dead in his bed. The autopsy shows a large thymus compressing the windpipe.

Certain cases of asphyxia of new-born babies are explained only by thymus hyperplasia. The child is born apparently dead and it often takes quite a long time to reanimate it; its breathing is difficult and loud. It remains cyanotic and in many instances dies after a few minutes or hours. The autopsy shows only some asphyxial lesions and an enormous thymus displacing and compressing the windpipe—no cardiac malformations, no cerebral hemorrhage, possibly only a few subpleural and subpericardiac hemorrhages.

The most striking symptom of thymus hyperplasia is dyspnea. This may be characterized by only a labored respiration or by the most intense choking spell. Between these two extremes, all forms of transition are found. Dyspnea may be constant or intermittent, with or without acute paroxysms. Between attacks, respiration may be entirely normal. There may be a constant and persistent inspiratory stridor, and in extreme dyspnea an expiratory stridor also, which is, however, less marked. In paroxysmic dyspnea, the child suddenly suffocates and becomes cyanotic. The stridor is extremely marked, respiration becomes accelerated and there is a sucking in of the suprasternal and infrasternal fossae. The choking spell may occur without cause, or when the child cries from pain or anger. Hyperextension of the head or dorsal decubitus exaggerates dyspnea. This would explain why dyspnea is more marked during sleep than during waking hours.

These paroxysms of dyspnea are extremely alarming to witness, and there is a great temptation to perform a tracheotomy. In such cases tracheotomy is useless, because the tube used is too short, the pressure taking place lower down in the thorax. From now on, every tracheotomy outfit should have tracheotomy tubes long enough to reach the bifurcation of the trachea. An interesting fact of the thymic dyspnea is that the voice is normal during the paroxysms as well as between. The choking spell may last a few minutes, a few hours or a few days, and then respiration becomes normal again. In other cases, death ensues. In certain cases the child dies at the beginning of the choking spell.

This dyspneic condition begins, as a rule, in the first weeks or months and diminishes the second year of life and is more seldom found after this period. This may be due to the fact that the gland normally retrocedes after the second year of life and that the superior opening of the thorax becomes larger with the growth of the child.

The spell of suffocation is due to compression of the windpipe by the thymus hyperplasia. The trachea is compressed to a more or less marked degree; the posterior wall of the trachea comes in contact with the anterior, so that there is very little or no space at all for the passage of air. The trachea may be compressed and displaced at the same time, especially toward the right side. When the trachea has been released from the pressure of the thymus, the flattening may remain; but in certain cases, especially in younger children in whom the trachea has kept its normal elasticity, the trachea resumes its normal caliber. This is especially true in chronic and in intermittent cases.

Pressure on the windpipe by the thymus takes place at two different points (Fig. 5).

The first point of pressure is found between the posterior surface of the manubrium sterni and the first and second vertebrae. At the superior opening of the thorax of a child the anteroposterior diameter measures only 2 cm., and as a rule the hyperplastic thymus measures more than 2 cm. in thickness; as the superior opening of the thorax is absolutely rigid and cannot increase its diameter, the thymus coming up like a wedge between the sternum and the spinal column will naturally compress the windpipe. A finger placed behind the episternal notch feels the impact of the rising thymus. If the superior opening of the thorax cannot increase its diameter, it can, on the other hand, diminish it, for instance, in the hyperextension of the head (Fig. 6). In such cases the vertebrae are projected forward and in so doing diminish the anteroposterior diameter of the superior opening of the thorax. This would explain why in certain cases death has followed such a position.

Another point at which the compression of the windpipe may take place, too, especially in adults, is the point situated between the brachiocephalic trunk and the left common carotid. This compression is not confined to one ring of the trachea alone, but extends over a certain portion of it. This is easily understood when we consider the anatomic relations of the thymus with the trachea in that region. As the thymus presses on the anterior surface of the trachea in the space between the left common carotid and the brachiocephalic trunk, and as the trachea lies in front of the spinal column, in

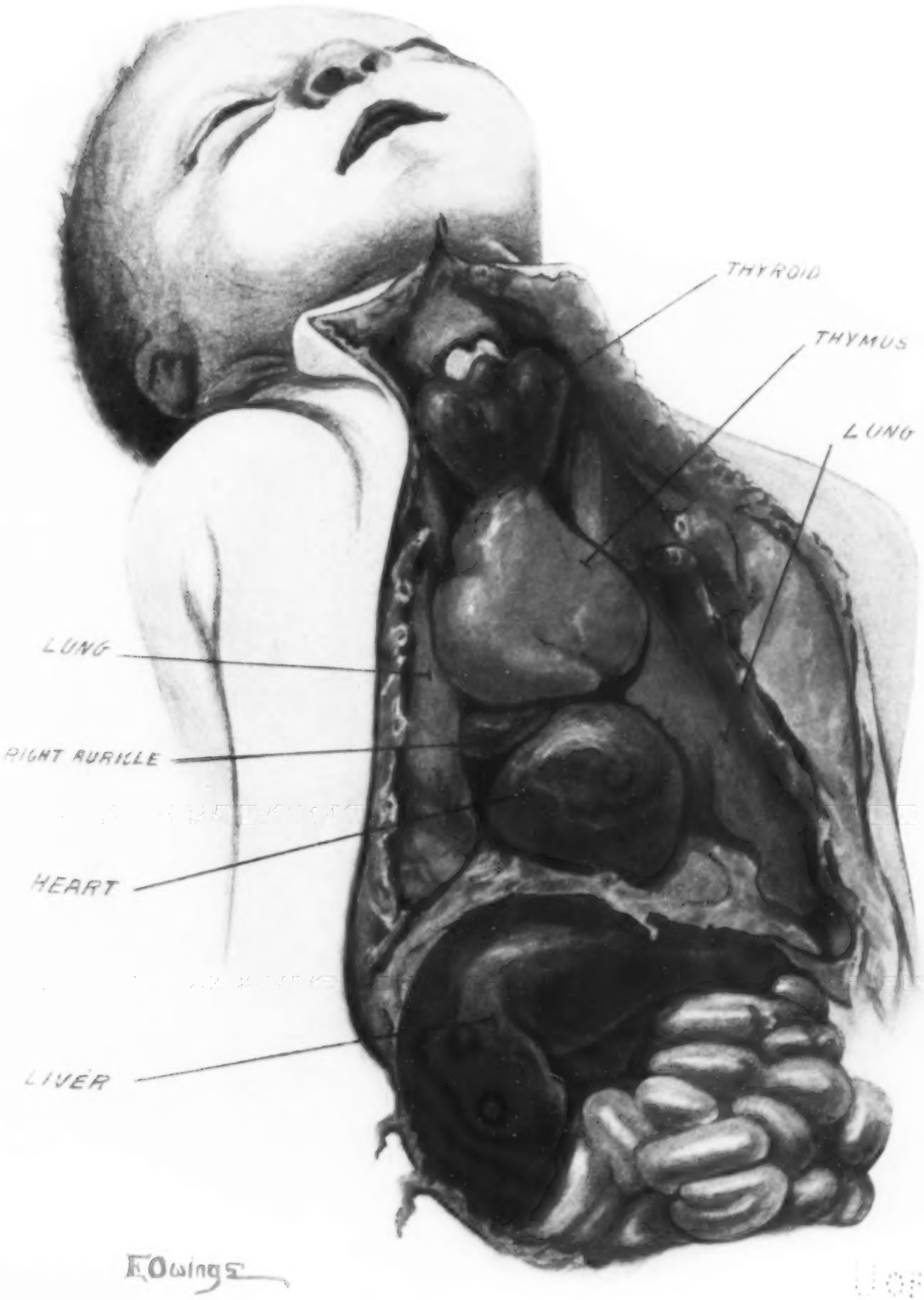

Fig. 3.—Case 7.—Post-mortem, showing the relations of thyroid, thymus, heart and lungs to each other.

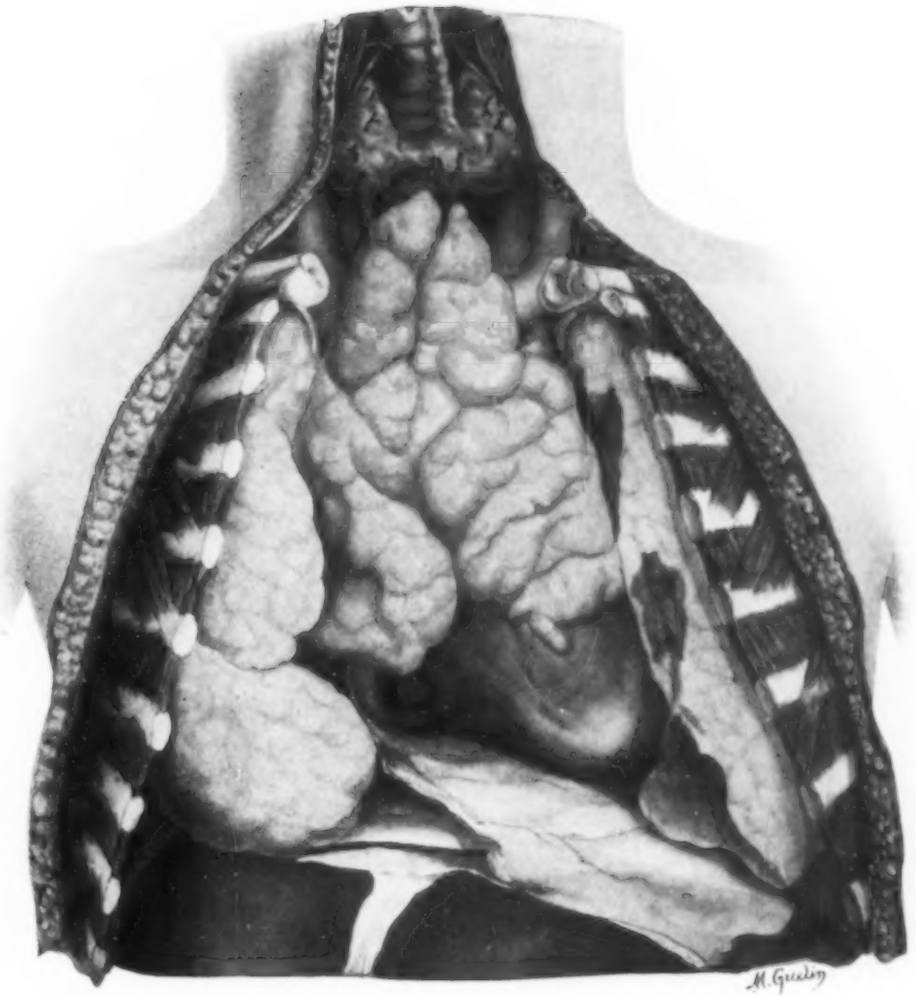

Fig. 4.—Hyperplastic thymus, showing its relations with the mediastinal organs.

Fig. 5.—This figure illustrates how the displacement of the aorta and of the brachiocephalic trunk will result in the stretching of the inferior laryngeal nerves. The two plus marks in front of the wind-pipe show the point of election of compression by the hyperplastic thymus (Klose).

cases of sudden enlargement the thymus will exert a compression on the trachea, being itself compressed between the spinal column and the sternum.

The first form of compression, which takes place at the superior opening of the thorax, is found mostly in children, as illustrated by my previously reported Case 5. The second form or thoracic form, which takes place, as above mentioned, between the brachiocephalic trunk and the left common carotid, is found mostly in adults, as illustrated by Cases 1 and 3.

Stenosis of the trachea due to direct pressure by the thymus has often been demonstrated at autopsies, and the cases which I have reported corroborate these findings. The successful surgical operations which have been performed in order to relieve patients of symptoms of thymic tracheostenosis also confirm these views. In a case of tracheostenosis Jackson was able to demonstrate by tracheoscopy that the trachea was compressed between the second and fourth ribs.

Such a compression is not present in all cases in which the patient dies with marked dyspneic symptoms. In these cases I think the explanation may be the following: The hyperplastic thymus compresses and displaces the large vessels, namely, the aorta and the brachiocephalic trunk. If we remember that the inferior laryngeal nerve winds around these vessels (Fig. 5) it will easily be understood that these nerves will be put on the stretch by the displacement of these blood-vessels. We know that irritation or stretching of the inferior laryngeal nerve causes a spasm of the glottis, although dilators as well as constrictors of the glottis are supplied by the inferior laryngeal nerve. But the constrictors of the glottis being stronger than the dilators, the irritation of the inferior laryngeal nerve by stretching causes a spasmodic contraction, instead of a dilatation, and consequently a spasm of the glottis. In such cases tracheotomy would save the patient.

In other cases I believe that direct pressure on the base of the heart and consequently on the heart ganglions may be the cause of death. This explanation is suggested to me by Case 2, of my first series. In that case the base of the heart was practically choked by the enlarged thymus. In similar conditions there are no periods of choking, and the patient dies with all the symptoms of sudden cardiac collapse.

It would be a mistake to believe that thymus enlargement is the only cause which can give a congenital stridor and respiratory trouble. Such conditions may also be found with malformations of the vestibulum of the larynx, with tracheobronchial glands and with adenoids. An accurate differential diagnosis must be made between these different forms of stridor.

The congenital vestibular stridor is seen after birth. It is entirely inspiratory and is not found on expiration, except in rare cases. Cyanosis is present too, but the stridor and dyspneic symptoms disappear with intubation of the larynx, which is not the case for the thymic dyspnea in children. The laryngoscopic examination, when possible, and the autopsy show that this stridor is due to a malformation of the superior opening of the larynx. The epiglottis has a gutter or beak-like form and is folded in the middle line. The plicae aryepiglotticae of both sides come in contact one with the other; they are pulled down over the opening of the larynx and so diminish its orifice; hence dyspnea and stridor.

Stridor due to tracheobronchial glands is found mostly on expiration, and the voice has a bitonal character. Furthermore, the thymic stridor is congenital; the tracheobronchial stridor is acquired. Percussion and radioscopy will reveal entirely different findings.

In adenoids there may be a difficult and labored breathing, which is more noticed during sleep; but in such cases, diagnosis will be easy.

Thymic stenosis should not be mistaken for a retrovertebral abscess or an acute laryngitis. In laryngospasm of infancy the period of apnea is very short, and in a few seconds respiration begins again. It is always a manifestation of a spasmogene diathesis and is always accompanied by other symptoms or other stigmata (Erb's facial and Trousseau symptoms).

The hyperplastic thymus may come in contact with and compress the right and left auricle and ventricle, the superior vena cava, the aorta, the brachiocephalic trunk and the left common carotid (Fig. 4); hence cyanotic symptoms characterized by distention of the veins of the neck, the puffiness of both supraclavicular spaces, cyanosis of the face and distention of the large fontanelle. During paroxysms these symptoms become extremely marked. The veins of the neck are much distended and the fontanelle protrudes; the face is puffed and the child is in a semi-comatose condition. The heart beats violently, or in certain cases stops beating. When the paroxysm is over, these symptoms retrocede, but in other cases it terminates in death. Autopsy shows that compression of the right auricle and ventricle and of the superior vena cava and aorta is very marked. In such

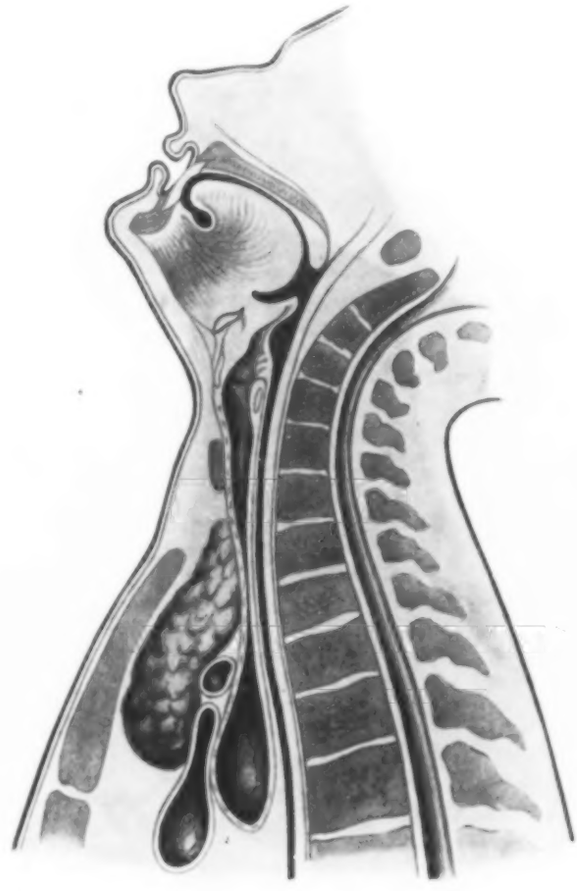

Fig. 6.—Hyperextension of the head, showing how compression of the trachea by a hyperplastic thymus can take place. The cervical vertebrae are displaced forward; the larynx and mediastinal organs are raised upward; the thymus is caught like a wedge between the sternum and spinal column. Hence compression of windpipe (Klose).

cases the dyspneic symptoms are of secondary importance. The vascular symptoms dominate the scene and extreme repletion of the veins of the neck and face, distention of the large fontanelle and the tendency to collapse will differentiate this form of cyanosis from the one due to congenital malformations of the heart. In the persistence of the foramen ovale, the cyanotic condition of the patient is uniformly distributed and persistent.

In people who die suddenly, autopsy does not always show the cause of death. In such cases, especially in children and young adults, the thymus is found enlarged. It is the only finding. If the thymus compresses the trachea and the large vessels, dyspnea and cyanosis will be found in the history of the case, and the autopsy will reveal that there is a compression of the windpipe and of the large vessels by an enlarged thymus. In such cases, even when the paroxysms have been short and unique, the cause of death is easily found, and its relation to the enlargement of the thymus is seen. But besides these, there are other cases of sudden death, in which no causes at all are revealed. There is no dyspnea, no cyanosis. The thymus is enlarged, but there is no sign of compression anywhere. Such deaths occur under anesthesia, and it makes no difference what anesthetic is used or in what amount. Death occurs early in the process of anesthesia or even after the patient has recovered from the anesthetic. In such cases, as a rule, the patient during anesthesia shows a tremor which resembles shivering from cold, as in my Cases 2 and 6. The respiration is accelerated and superficial; the pulse is weak; the face is white; the pupils are dilated; respiration stops first and then the heart.

Death during anesthesia for operation for adenoids has been thought to be due to a thymus enlargement, which in such cases coincides with the enlargement of the tonsils, adenoids and other lymphoid tissues—in other words, with a status thymolymphaticus. Sudden death may occur in little children, especially during the night. The child wakes up suddenly, tries to stand up, his pupils become dilated, his respiration stops, he stiffens and contracts himself and dies. This death has been reported, too, after plunging the child into cold water, after the opening of a retropharyngeal abscess, after a simple examination of the throat and after a simple hyperextension of the head.

Hyperplasia of the thymus has been found in connection with alterations of the endocrines glands, in simple goiter, hyperthyroidism and myxedema, acromegaly and tetany. In goitrous countries, especially in Bernese regions, where goiter is endemic, thymus hypertrophy and struma in the new-born is exceedingly frequent. In 1910, in the Bernese Pathologic Institute, forty-four post-mortems of the new-born were made. In twelve of these cases thymus hyperplasia was extremely marked and the goiter of large size. In adults this combination of thymus hyperplasia and goiter is more frequent than it has heretofore been supposed.

Rössle reports a series of fifty-two cases of hyperthyroidism with thymus hyperplasia. McCardi, in thirty-five cases of sudden death in hyperthyroidism, found eighteen cases with hyperplasia. Rehn, in 319 cases of Graves' disease, treated surgically, had forty-two deaths. Six patients died with extremely marked dyspneic symptoms. In the literature Matti found 133 cases of hyperthyroidism, in which post-mortem had been held, and in ninety-eight cases, making 74 per cent. of the total cases, hyperplastic thymus was found. These figures show that thymus hyperplasia, in combination with Graves' disease, is very frequent.

In many such cases death has been mechanically due to a compression of the windpipe or to a stretching of the inferior laryngeal nerve, but in a great many other cases death can occur without compression or irritation of the laryngeal nerve, and no dyspneic symptoms are present. In such cases the explanation of sudden death by compression of the large vessels and trachea would not be correct. Some have thought that death was due to compression of the phrenic nerves, hence apnea; others have thought that death was due to pressure of the vagus and inferior cardiac nerve, hence collapse; but there are no anatomic facts to substantiate these theories. When compression on the base of the heart is very marked, as in my Case 3, I believe that death may be due to a compression of the heart's ganglions.

Paltauf explains such death by his lymphaticothymic theory. In his judgment, thymus hyperplasia is only one symptom among others of a disease which involves the entire lymphatic apparatus, and which he calls status thymolymphaticus. This condition would cause abnormal metabolic changes, which take place in the nervous centers controlling the heart action and cause a sudden cardiac insufficiency with acute dilatation of the heart. This hypothesis, possibly correct in a few cases, has not been sufficiently corroborated by facts, and does not stand the analysis of our new anatomic and physiologic acquisitions. The thymus is not a lymphoid, but a glandular organ. Cases of pure thymus hyperplasia, without status lymphaticus, and vice versa, are often found, and in many cases of thymus hyperplasia with sudden death the syndrome of Paltauf is lacking.

Lately Svehla has asserted that the thymus gives off an internal secretion, and he thinks that death is due to this substance acting on the heart and the nervous system.

In injecting a watery solution of thymus extract into animals, Svehla found a diminution in the blood-pressure and increased rapidity of the pulse. Repeated injections caused death of the animals; therefore he considers the mors thymica a consequence of a hyperthymization, which causes a diminution in the blood-pressure.

Vincent, Hart, Sheen, Farini and Vidoni confirmed these findings, but found that other extracts of tissues, muscles, kidney, liver, testicles, spleen, pancreas and lungs have the same depressive effect on the heart; these observers concluded that this property of diminishing the blood-pressure is not specific to the thymus.

The physiologic action of the thymus is not yet clear. This organ must certainly be of importance to the organism, because it grows until the age of puberty and then gradually retrocedes, but remains of it are still found in old age. According to the latest experiments of Klose, this organ is essential to life. Congenital absence of the thymus has been found in a few cases, but only in the new-born who died from other causes, so that they did not live long enough to show the pathologic effects of an absence of the thymus. Lubarsch performed an autopsy on an infant 8 weeks old, in which the absence of the thyroid was total. A careful examination of the other glands, thyroid, hypophysis, adrenals, pancreas and genital organs did not reveal any detectable pathologic conditions.

The results of the transplantation of thymus are contradictory, and it may be said in conclusion that the transplanting of a normal thymus does not cause any

symptoms, but that the transplanting of a hyperplastic or pathologic thymus causes toxic symptoms which center their effect especially on the circulatory and nervous apparatus. In my Case 3, I had marked thymotoxic symptoms; in Case 4, no symptoms at all.

Bircher, after implanting in the peritoneal cavity of dogs a fresh hyperplastic thymus taken from a patient who died after an operation for Graves' disease, observed marked cardiac and nervous symptoms, a hyperplasia of the thyroid gland and an exophthalmos. Schmidt and other authors in doing the same experiment obtained negative results.

How is death after strumectomy in hyperthyroidism to be explained? In order to give a satisfactory answer, we should know a little more about the relations between the thyroid and the thymus. Do they have an antagonistic action or do they work harmoniously? Gierke believes that the two glands compensate each other more or less and that in strumectomy there is a diminution in the thyroid secretion and consequently an increased thymus function, which causes a hyperthymization.

Rössle thinks that the hypertrophy is only an expression of the increased demand in the function of an organ; possibly in Graves' disease the hypertrophy of the thyroid is not sufficient to furnish the desired amount or quality of secretion. Therefore the thymus hypertrophies in order to supply the deficiency of the thyroid.

Hart thinks that there is an antagonism between the functions of the thymus and the thyroid. He believes that the hyperplasia of the thyroid is due to the effort of this gland to destroy the poisons of thymic origin. Sudden death after strumectomy in hyperthyroidism is due, according to Hart, to a thymic auto-intoxication.

Garre, Capelle and Bier believe that the thymus aggravates the hyperthyroid symptoms. The thymus, in their judgment, does not compensate the thyroid secretion, but works more or less harmoniously with the thyroid; the thymus, like the thyroid, has a sympatheticotonic and vagotonic action.

Bircher believes in the possibility of a hyperthyroidism of thymic origin and thinks that the thyroid and the thymus have an antagonistic action.

From all these different opinions, we can draw the conclusion that the hyperplastic thymus aggravates Graves' disease, but we do not yet know the exact relation between the thymus and the thyroid. The solution of the problem is still a difficult one and will be solved probably when we know a little more about the internal secretion and the part played by the hormones.

Wiesel and Hedinger found in cases of status thymolymphaticus a hyperplasia of the chromaffin system, and Matti found experimentally that after thymectomy the medullary substance of the adrenal bodies is markedly increased and that in cases of thymus hyperplasia the medullary substance of the adrenals was decidedly diminished. Hence the conclusion of Wiesel that in cases of status thymicus there is a hypoplasia of the chromaffin system. In that case the secretions of these bodies, which in normal condition have a tonic action on the vascular system, are diminished or wanting; hence hypotony, a diminution in the blood-pressure, and finally a paralysis of the vascular and cardiac systems and death. This explanation is not in accordance with my researches. I have made it a practice to determine the epinephrin content of the blood in every goiter case. In hyperthyroidism I have found, as a rule, an increased epinephrin content in the blood. The whole question is far from being solved and needs further investigation.

151 East Broad Street.

BOILED VERSUS RAW MILK

AN EXPERIMENTAL STUDY OF MILK COAGULATION IN THE STOMACH, TOGETHER WITH CLINICAL OBSERVATIONS ON THE USE OF RAW AND BOILED MILK

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Milk, alone of all foods, enters the stomach a liquid and becomes there a more solid food. This hidden and insidious solidness, if I may use the term, is peculiarly characteristic of raw cow's milk, as compared with boiled cow's milk, or human milk. The housewife and the dairyman are practically familiar with the fact that boiled milk forms a different curd from raw milk. We, on the other hand, have quite ignored the fact that raw and boiled milk are not identical foods. If we have thought of it at all it has been rather from a bacteriologic than from a physiologic point of view. And yet boiled cow's milk forms in the stomach, as does human milk, nearly a liquid food; while raw cow's milk, as I shall hope to demonstrate, is not even a soft food, but a solid food, so solid, in fact, that, unless modified in some way and given in careful moderation, it commonly forms hard masses that pass undigested throughout the whole alimentary tract and appear as hard curds in the stools.

It is exactly in these hard curds that one has the most tangible evidence that raw and boiled milk are not interchangeable clinical and experimental factors. It will be remembered that Talbot[1] demonstrated from various angles that these "hard tough curds" were casein derivatives, that is, "casein curds," in contradistinction to the small, soft, white curds that are "fat curds." Meyer and Leopold,[2] representing the Finkelstein school, denied the existence of a casein curd, basing their conclusions on the analysis they had made and on metabolism experiments. There was only one possible explanation for this discrepancy between equally competent observers about so simple a phenomenon; the hard curds that Talbot and other American clinicians described did not occur in Leopold and Meyer's experience. Talbot used raw milk, Meyer and Leopold used boiled milk exclusively, and the hard curd is essentially a raw-milk phenomenon, as pointed out independently by Ibrahim[3] and myself.[4] Meyer then fed a number of babies raw milk and promptly for the first time in his enormous experience saw these hard curds, and at once granted their casein origin. After being impressed again and again by the striking differences in the behavior of raw milk and boiled milk, first in the clinic and then in laboratory and stomach experiments, I cannot help feeling that other differences in clinical results will be cleared up, as in this case, if we have in mind that raw milk and boiled milk are not identical foods.

In the former paper[4] I offered as an explanation, as did also Ibrahim,[3] for the invariable occurrence of these hard curds when enough raw milk was fed, that, while

1. Talbot, F. B.: Composition of Large Curds in Infants' Stools, Boston Med. and Surg. Jour., June 11, 1908, p. 205; The Composition of Small Curds of Infants' Stools, Boston Med. and Surg. Jour., Jan. 7, 1909, p. 13; Casein Curds of Infants' Stools, Arch. Pediat., December, 1910, p. 919; Casein Curds in Infants' Stools, Biologic Proof of Their Casein Origin, Arch. Pediat., June, 1910, p. 440.

2. Meyer, L. F., and Leopold, J. S.: The So-Called Casein Masses in Infants' Stools, Arch. Pediat., October, 1909, p. 773, and February, 1910, p. 126.

3. Ibrahim, J.: Kaseinklumpen im Kinderstuhl in Zusammenhang mit Rohmilchernährung, Monatschr. f. Kinderh., 1911, x, No. 2.

4. Brennemann, Joseph: A Contribution to Our Knowledge of the Etiology and Nature of Hard Curds in Infants' Stools, Am. Jour. Dis. Child., May, 1911, p. 341.

boiled milk formed fine soft curds in the stomach, raw milk formed large hard curds that under given conditions would be passed through the whole digestive tract before they were completely digested. The evidence for this explanation was twofold:

1. Experiments *in vitro*. When rennin is added to raw milk in a beaker at a proper temperature the milk will quickly form a dense hard coagulum that separates rapidly and completely from the whey. Boiled milk under the same conditions coagulates less slowly, separates less completely and forms a soft, finely divisible curd that differs but little from a thick liquid.

2. The clinical observation that babies fed on raw cow's milk will at times vomit hard, leathery curds of enormous size.

A third observation, made since that time, makes this explanation even more probable. In a series of babies I have found that if raw milk is injected by rectum and retained for a time, the next bowel movement will contain typical hard curds, indistinguishable from those that occur when raw milk is fed by mouth. If the milk was returned in a short time the curds were soft and white; if after four or five hours, they were smaller and harder, more brownish or amber-colored, and more rounded or bean-shaped, an exact parallel to what occurs when these curds are present clinically. Thus in diarrhea, in which they are rushed through rapidly, they resemble more nearly a fresh-milk coagulum. As a condition of constipation is approached and they pass through more slowly they contract longer and are therefore harder, are more stained and are more rounded. If a portion of the feces of one of these babies is added to milk, the latter will coagulate as with rennin. The identical nature of the process of curd formation in the two cases can hardly be doubted. With boiled milk no such typical hard curds were formed in the rectum.

The interest now naturally drifted away from the hard curds to the processes going on in the stomach that produced them. The difference in coagulation of raw and boiled milk as shown in the beaker could not be applied forthwith to the stomach. One must assume, until the opposite is proved, that a living organ, lined with an active mucous membrane, with a complex specific secretion and a constant peristaltic motion, acts otherwise on ingested milk than would a motionless glass beaker. Czerny[5] has maintained, for example, that the constant motion of the stomach prevents the formation of large hard curds. That motion does not prevent the formation of large hard curds is evident from experiments *in vitro* when the milk and rennin are constantly stirred or shaken. In fact, the curds thus formed are always large, with raw milk, and peculiarly hard; often, indeed, the whole curd content of the beaker is collected in one hard mass. Whether there are other conditions present in the stomach that cause milk to act differently there than in a beaker can be determined only by a study of what goes on in the stomach itself.

Such a study presents difficulties that are greater than one would at first imagine. The stomach-tube, on account of the size of the curds, is worse than useless, because its use can lead only to erroneous conclusions. The use of an emetic introduces an element that is objectionable because unnatural, and is accompanied by discomforts that practically prohibit its use. Both are peculiarly contra-indicated in an infant, and the use of an emetic, especially in the presence of large hard curds, would not be wholly free from danger.

5. Czerny, A.: Des Kindes Ernährung, Ernährungs-Störungen und Ernährungs-Therapie, 1909, Franz Deuticke, Leipsic und Berlin.

While debating in my mind how these difficulties could be overcome, I discovered a healthy young adult, with normal digestion, and according to an analysis by Dr. Buhlig, with normal stomach contents, who could promptly, with little effort and a minimum of trauma to the curds, empty the stomach by the simple method of passing the finger into the throat. I intended at first to have this done only twice, once with raw milk and once with boiled milk, but the process was so free from serious discomfort, the disclosures so interesting, and the subject so willing, that about forty experiments were made with raw and boiled milk and with various "milk modifiers." While these observations were made on the adult, and only such application must be made to the infant as known identical physiologic conditions would warrant, nevertheless they can at least form a working basis for clinical observation in the infant.

In all of these experiments, unless otherwise stated, one quart of certified milk was taken in a period of about five minutes, at a temperature of about 95 F., on an empty stomach before breakfast, and was returned at the end of thirty minutes. One quart was a simple measure and represented about the amount, relatively, that a baby would take at one feeding. When "boiled" milk was used it was milk boiled actively for five minutes in a single boiler and then cooled to 95 F. as before.

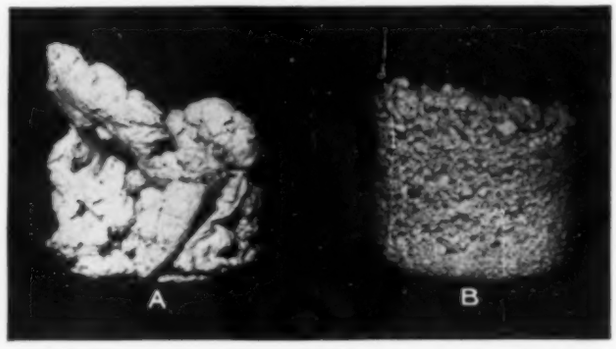

Fig. 1.—*A*, curds of one quart of raw fat-free milk returned from the stomach after thirty minutes; *B*, curds of one quart of boiled fat-free milk returned from the stomach after thirty minutes. (The glass jars in which the specimens in this and the following illustrations were placed do not show in the reproductions. All pictures of specimens are one-half their actual size.)

After examining the returned contents, 40 per cent. formaldehyd solution was added up to 10 per cent. After standing for from six to twelve or more hours the curds were hard, and were then washed, dried and placed in jars as here shown. The preserved specimens are all smaller than the fresh ones, very much so when returned in thirty minutes, because they contracted considerably after being returned, while those remaining in the stomach much longer contracted very little.

REPORT OF EXPERIMENTS

EXPERIMENT 1 (Fig. 1 *B*).—A quart of boiled fat-free milk, returned in thirty minutes, had curdled in fine, small, easily divisible, soft masses, that were of about the consistency of good custard, and were imperfectly separated from the whey even after standing for some time.

EXPERIMENT 2 (Fig. 1 *A*).—Same as Experiment 1, except that one quart of raw fat-free milk was used. There was complete separation of curd and whey. In the clear straw-colored whey there were lying enormous, distinctly isolated curds that were firm and more or less rubbery, could be handled easily without breaking, and resembled exactly the curds I had become familiar with in beaker experiments when the milk and rennin were stirred constantly. So large and firm were

these curds that they caused a sensation of alarm as they passed the throat. The average size was from that of a hazelnut to that of a walnut; many were 2 inches long, and one was 3 inches long and for the greater part of its length was 1 inch in diameter.

EXPERIMENT 3.—Same as Experiment 2, using raw whole milk. The result was the same except that the whey was a little milkier, and the curds somewhat yellower, softer and even larger than before. One curd was 4 inches long. Another came into the throat, stuck for a while, had to be reswallowed, and resisted all further attempts at delivery.

EXPERIMENT 4.—Same as Experiment 3, except that the raw whole milk was returned in one hour instead of thirty minutes. About a pint was returned. There was complete separation, as before, of curd and whey, but the latter was more turbid, was distinctly bitter and contained more mucus. The curds were somewhat smaller than before, were less angular, more rounded and firmer, and many had bizarre shapes, evidently arising from the coalescing of several curds. There were many more fine curds than before.

EXPERIMENT 5 (Fig. 2 *A*).—Same as Experiments 3 and 4, except that the raw whole milk was returned at the end of two hours. About a pint was returned. This was much more bitter than in the previous experiments, and had a decided taste and odor of vomitus for the first time. The whey was decidedly

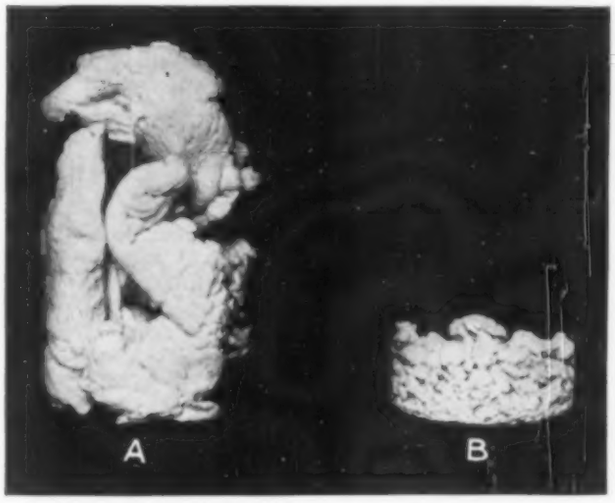

Fig. 2.—*A*, curds of one quart of raw whole milk returned from the stomach after two hours; *B*, curds of one quart of boiled whole milk returned from the stomach after two hours.

turbid. There were few small curds, but the remaining curds were larger and harder to return than in any other experiment in the whole series. One curd, from one-half to three-quarters of an inch thick, was 5 inches long and extended laterally 2½ inches at one end and 1½ inches at the other end. Another was banana-shaped, 1 inch in diameter and 3 inches long. Another was 2½ by 1½ by ¾ inches. They were all smooth and rounded, as if the sharp corners had been packed down.

EXPERIMENT 6 (Fig. 2 *B*).—Same as Experiment 5, except that boiled whole milk was used. Returned in two hours. There was so little whey that it was necessary to drink a glass of water to be able to return all of the curds. The curds were still abundant, averaged from a pea to a small hazelnut in size, and were larger and firmer than when returned in thirty minutes.

EXPERIMENT 7 (Fig. 3 *B*).—Same as Experiment 6, except that the boiled whole milk was returned in three hours. Contents could not be returned without drinking water. Were reported "bitter and sour." About a tablespoonful of rather soft, round curds were returned, that were about the size of sand grains, with a few as large as a pea. A large mass of mucus floated on top of the water with gray, feathery, stringy masses of milk tangled up in it. The stomach was thus nearly empty after three hours, with boiled milk.

EXPERIMENT 8 (Fig. 3 *A*).—Same as Experiments 3, 4 and 5, except that the raw whole milk was returned in five hours. A glass and a half of water was required to return it. It was reported that the returned fluid was very "bitter" even in this dilution, but especially that "it left a horrid taste in the mouth as after taking vinegar." The liquid was very turbid and was filled with feathery whitish strings of mucus radiating out in parallel lines from the remaining curds to which they were intimately attached. There were still about ten curds an inch or more in length, and from half an inch to an inch in breadth. One was over 2 inches long. All were rounded or almond-shaped and firmer than in any preceding experiment. Some had, again, bizarre shapes, and looked as if eaten into, an appearance that is characteristic of the large, hard, yellowish curds of infants' stools. There were few small curds. Thus with raw milk there were still large curds after five hours.

EXPERIMENT 9 (Fig. 4 *B*).—One quart of whole milk was pasteurized by heating twenty minutes at 155 F. and was

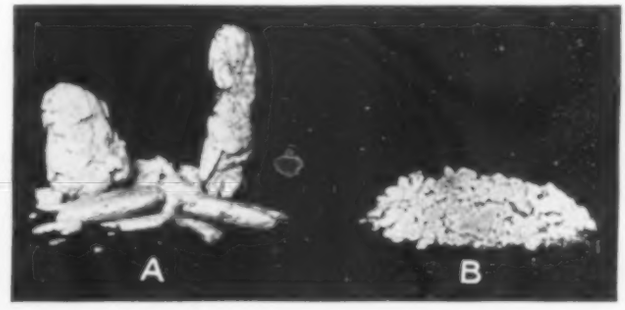

Fig. 3.—*A*, curds of one quart of raw whole milk returned from the stomach after five hours; *B*, curds of one quart of boiled whole milk returned from the stomach after three hours.

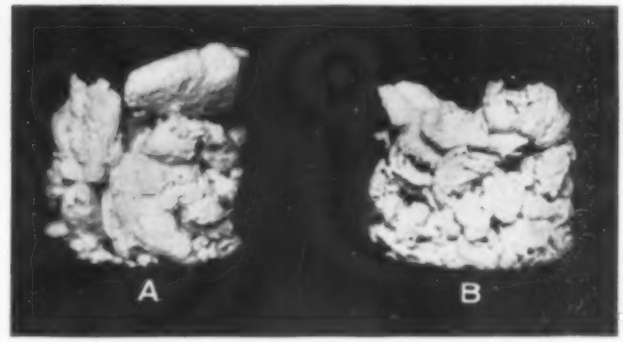

Fig. 4.—*A*, curds of one pint of raw whole milk returned from the stomach after thirty minutes; *B*, curds of one quart of pasteurized whole milk returned from the stomach after thirty minutes

returned in thirty minutes. The result lay between that of raw and boiled milk but much nearer the former. There was complete separation of curd and clear whey as with raw milk. The curds were not so massive but had all the characteristics of raw milk curds.

So far in each experiment the quart of milk was taken in about five minutes. To meet the objection that a baby does not take its milk in this way, but slowly over a period of from ten to twenty minutes, the following test was made:

EXPERIMENT 10.—A quart of raw whole milk was sipped slowly in a period of forty-five minutes, and returned thirty minutes later. One pint of clear whey, without bitter taste, was returned and contained only one small curd. Two glasses of water were returned clear with no curds. For some time a "heavy feeling" was felt under the lower end of the sternum. Five hours later, with two glasses of water, half a dozen curds

were returned, that were each about the size of a large almond, and resembled closely those of Experiment 8.

To exclude the possibility of coincidence this experiment was repeated four times:

Experiment 11.—Duplicate of Experiment 10. Result exactly the same except that there were no curds after thirty minutes or after five hours.

Experiment 12.—Same as Experiments 10 and 11, but sipped only thirty minutes. Result the same. Only one curd after thirty minutes. No attempt was made to return the contents after five hours.

Experiment 13.—Same as Experiments 10, 11 and 12 except that one pint of raw whole milk was sipped in thirty minutes. Results exactly the same. Half a pint of clear whey was returned after thirty minutes. No curds then or five hours later.

Experiment 14.—Same as Experiment 13, but sipped in twenty minutes. Result the same except that the returned whey contained six or seven curds the size of unshelled almonds. This is at least suggestive that the shorter period of sipping is causing curds to return.

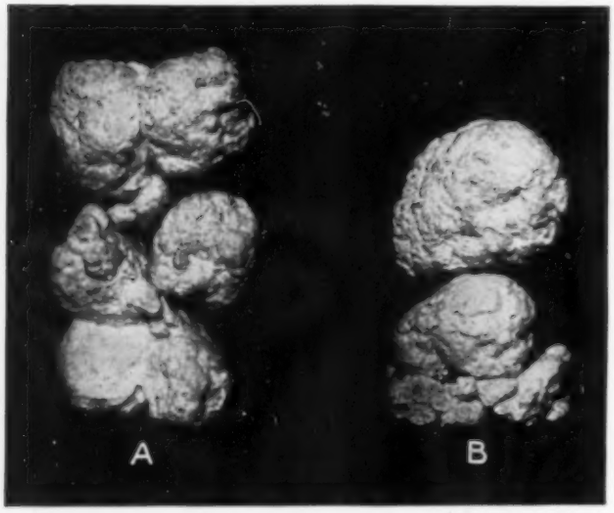

Fig. 5.—*A*, large curds formed in the beaker when raw whole milk and rennin solution were slowly mixed and stirred over a period of forty-five minutes and stirred for thirty minutes longer. Note coalescence of large curds. *B*, same as *A* except that raw fat-free milk was used. Only two very large curds and a few very small ones formed.

This astounding and most unexpected result to my mind admits of only one interpretation, that drinking raw milk very slowly favors the formation of a smaller number of curds so large that they cannot be returned. The large amount of unmistakable whey was positive evidence that the milk had coagulated completely as raw milk always does, and it is unthinkable that the curd could have passed on and left the whey. The absence of bitter taste, that is, peptonization, would alone exclude such a possibility. That they had not passed on was evident, too, from the fact that in the first case, at least, curds were returned after five hours.

Further evidence that this explanation is the correct one was obtained in two ways: (1) by repeating the sipping experiments with diluted raw milk, or with undiluted boiled milk, instead of undiluted raw milk; and (2) by duplicating the experiment in the laboratory. Diluted raw milk and undiluted boiled milk, even if they showed the same tendency to form larger curds if sipped, would still not be likely to form curds large enough not to be returnable.

Experiment 15.—Sipped in forty-five minutes a mixture of 1 pint of raw whole milk and 1 pint of water. The whey was returned clear with a large amount of curd practically indistinguishable in amount and size from those found when equal parts of raw whole milk and water were taken in five minutes. (See Experiment 19.)

Experiment 16.—One quart of boiled whole milk sipped in forty-five minutes and returned in thirty minutes. Large amount of curd returned, indistinguishable again from that of former experiment in which boiled whole milk was taken in five minutes.

The evidence from the laboratory was equally positive and demonstrated, once more, the striking parallelism between coagulation behavior in the stomach and in the test-tube. The laboratory experiment, furthermore, can be seen throughout the process, and offers an evident explanation for this phenomenon.

Experiment 17 (Fig. 5 *B*).—A vessel was set in water, over a heater, and kept at a temperature of from 100 to 105 F. To this was slowly added, over a period of forty-five minutes, from one vessel a quart of raw fat-free milk and from another a solution of 60 grains of chymogen (a proprietary preparation containing rennin) in 1 ounce of water. The mixture was stirred gently and constantly during this time and for thirty minutes after all the milk and ferment had been mixed. In five or ten minutes after the beginning of the experiment a fine flocculent coagulum began to form. The small curds formed during the process of stirring gradually united with one another into larger masses, which in turn attracted other smaller curds, until at the end of the experiment the clear whey contained two large round firm curds, one the size of a tennis-ball, the other that of a golf-ball. Neither, I feel sure, could have been returned from the stomach. Outside of these two large balls there were only a few small curds, such as those that were occasionally returned in the sipping experiments.

Experiment 18 (Fig. 5 *A*).—To exclude, again, the possibility of coincidence the experiment was repeated exactly with raw whole milk. In this case the coagulation was for some reason less rapid, the whey less clear as would be expected, but the result was otherwise identical. Practically all of the curd was collected into six round firm balls, each about the size of an English walnut.

The explanation for this phenomenon becomes evident as one watches coagulation experiments. Two curds brought into contact with one another almost immediately coalesce, so that practically no line of cleavage is left. This tendency seems proportional to the freshness of the curds. Thus in the last two experiments one could gradually see two or more curds predominating over the rest and uniting to them the small nascent curds as they came into contact with them. This accounts for the fact that not infrequently the curd of milk and rennin, stirred constantly in a beaker, will form in one large hard ball. This union of curds is well shown in the specimen of the six balls of the second experiment that were allowed to lie together in a graduate for a few seconds before formaldehyd solution was added. They were quite inseparable.

It is probable that such coalescence of curds takes place less readily in the stomach. Two stomach curds if brought in contact show relatively little tendency to unite. This seems to be due to the coating of mucus over the curds, and is probably proportional to the amount of the latter. Indeed, if curds united as readily in the stomach as they do in the beaker, it would be hard to see how their union into one large curd could possibly be avoided, when we consider how peculiarly favorable the peristaltic movements of the stomach as shown in recent *x*-ray work are for pressing the con-

tents together. That curds do unite, however, in the stomach is shown in the sipping experiments and in the facts that the largest curds occurred after two hours and that many large curds are manifestly a union of several smaller curds.

When we come to consider the question of whether boiled milk differs clinically and therapeutically from raw milk, it will be of interest, first, as bearing directly on this question, to see what happens in the stomach when the various empirically time-honored "milk-modifiers" are used. It is certainly an interesting fact in this connection that nearly all "milk-modifiers" such as dilution with water, cereal water dilution, alkalinization, condensation, drying, souring, peptonization, the use of pegnin or other lab-ferments, all have one thing in common: they prevent in one way or another the formation of a large hard curd in the stomach. Have we not been told emphatically too by Finkelstein[6] that *Eiweissmilch*, which also has been modified in this way, does not work well, in fact can work disastrously when the curd is not fine? The following experiments were made along this line:

EXPERIMENT 19 (Fig. 6 *A*).—Dilution. A mixture of 1 pint each of raw whole milk and water was returned in thirty minutes. There was complete separation of curd and whey, but the latter was somewhat turbid. The curds were much smaller, softer and more friable than with undiluted milk. Although many of them were from 1 to 1½ inches long, they were peculiarly thin, often membrane- or ribbon-like, and all seemed spongy or porous. There was also a large amount of crumbly detritus.

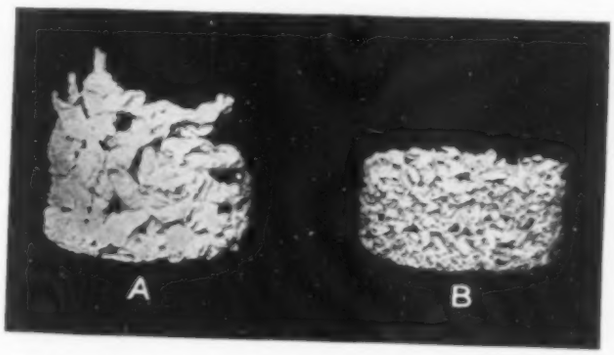

Fig. 6.—*A*, curds of raw whole milk diluted with an equal amount of water and returned from the stomach in thirty minutes; *B*, same as *A*, with barley-water substituted for water.

EXPERIMENT 20.—Same as Experiment 19, except that the milk was boiled and the mixture was returned in one hour. There was so little whey that it was necessary to drink water. About a level tablespoonful of soft fine curd, about like coarse sand, was returned.

EXPERIMENT 21.—A mixture of 8 ounces of raw whole milk and 24 ounces of water was returned in thirty minutes. This did not differ much from the dilution of 1 to 1, but the curds were a little smaller and still more porous or spongy looking. The latter condition seemed characteristic of diluted milk.

EXPERIMENT 22 (Fig. 6 *B*).—Barley-water. A mixture of 1 pint of barley-water (one-half ounce of barley flour to 1 pint of water boiled twenty minutes in a single boiler) and 1 pint of raw whole milk was returned in thirty minutes. The curds were small, like fine gravel, of peculiarly uniform size, with few as large as peas. About a third of them floated. They were greenish-gray in color. They were much finer even than with the 1:3 dilution with water, and were about the same size as those of undiluted boiled milk.

6. Finkelstein, H., and Meyer, L. F.: Ueber Eiweissmilch, Jahrb. f. Kinderh., May and June, 1910.

EXPERIMENT 23.—Sodium citrate, 2 grains to the ounce, was added to 1 quart of raw fat-free milk and returned in thirty minutes. There was no separation whatever of curds and whey even after standing for some time. The milk was simply thickened like a good cream soup, with no distinct curd formation, except an occasional small floccule.

EXPERIMENT 24.—Sodium citrate, 1 grain to the ounce, was taken in 1 quart of raw whole milk and returned in thirty minutes. The returned fluid looked like pale bluish milk, and the curds were soft, scraggly looking, about midway in size and consistency between those of raw and those of boiled milk.

EXPERIMENT 25.—Sodium citrate, 1 grain to the ounce of milk, that is, 16 grains in a mixture of 1 pint of raw whole milk and 1 pint of water, was returned in one hour. The separation of curd and whey was much more complete than in Experiments 23 and 24. The curds were about the size of coarse sand or fine gravel, and nearly all floated. The reaction was practically the same as in Experiment 20, with equal parts of boiled milk and water.

EXPERIMENT 26.—Sodium bicarbonate, 2 grains to the ounce, in 1 quart of raw whole milk, was returned in thirty minutes. The result was indistinguishable from that when an equal amount of sodium citrate was used, except that the returned fluid was yellow, probably because whole milk was used. The mixture was so nauseating and hard to take that only 28 ounces could be swallowed. Large amounts of gas were returned during the process, sometimes bringing milk with them. For some time there was annoying belching and a feeling of fulness. These objectionable features were of course wholly absent with the sodium citrate.

EXPERIMENT 27.—Lime-water, 5 per cent., that is, 30 ounces of raw whole milk with 1½ ounces of lime-water, was returned in thirty minutes. There was distinct separation of curds and whey, but the latter was rather milky, though not so much so as with the sodium salts. The curds were about the size of those of milk with 1 grain of sodium citrate to the ounce, that is, about midway between those of raw and boiled milk. They were, however, peculiarly soft, scraggly and friable, so that they could hardly be picked up without breaking.

Fig. 7.—Stomach contents returned thirty minutes after drinking one quart of a 1:10 watery solution of condensed milk.

EXPERIMENT 28.—Lime-water 10 per cent., under the same conditions as in Experiment 27. The result was the same, except that the curds, while perhaps not smaller, were even thinner, more ribbon-like or flaky, more soft and friable than in the preceding experiment, and were described as subjectively "the softest yet." The returned contents were said to have a "very sweet taste."

EXPERIMENT 29 (Fig. 7).—Condensed milk, 1 quart of 1:10 dilution with water, was returned in thirty minutes. The curd formed a fine soft flocculent precipitate like fine white sand. This quickly settled to the bottom like a fine sediment leaving about an equal amount of nearly clear water above it.

EXPERIMENT 30.—Buttermilk. One pint of milk ripened with *Bacillus bulgaricus* was returned in one hour. About 10 ounces were returned. There was no perceptible change, but it was said to have been "sourer up than down."

No tests were made with powdered milk foods, or with *Eiweissmilch*, but there can be no doubt what the result would be.

It is, of course, necessary to confirm these results in other cases before one can assume that they are of unquestionable general application, and I attempted to dupli-

cate some of the experiments on myself. Using the same method was wholly unsuccessful and the following was resorted to as the nearest imitation:

EXPERIMENT 30 (Fig. 8 *A*).—One quart of raw whole milk was swallowed in five minutes, and thirty minutes later one-tenth grain of apomorphin was taken hypodermically. The result was satisfactory in about ten minutes, and the curds and whey were exactly as in the other case except that they were somewhat smaller. This may be accounted for, to some extent, by the comparatively prolonged and violent labor required to deliver the curds that at this stage are still quite breakable. The narcotic effect of the drug was, however, so violent for many hours that it seemed wiser to use only one twentieth of a grain in the remaining two attempts, with the result that, while the nausea was as intense, it was not so productive as with the larger dose.

EXPERIMENT 31 (Fig. 8 *B*).—A quart of boiled whole milk was returned after thirty minutes with about 2 ounces of curd that was exactly as in the other person, except that the curds were rather finer.

An attempt to return a quart of raw whole milk after four hours was not convincing. A small amount of turbid fluid was returned with some nearly disintegrated curds. Whether there were larger ones that were not returned is uncertain, as the effect of the drug was inadequate.

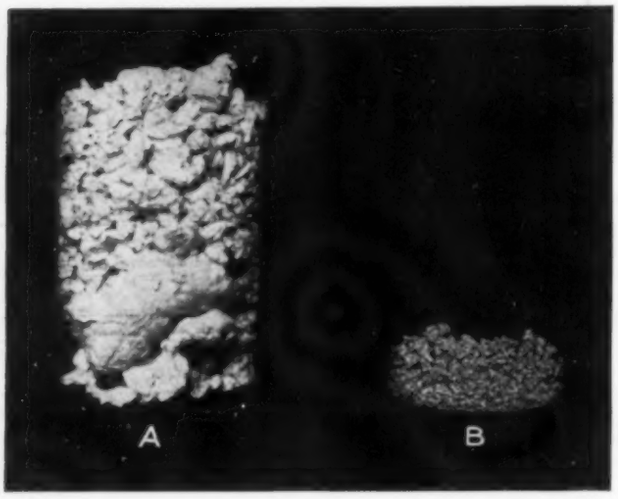

Fig. 8.—Same as Figure 1 in a second individual. *A*, raw whole milk; *B*, boiled whole milk.

The criticism that these findings may be largely individual in this case, and were only unsatisfactorily corroborated in a second case, must be admitted, and yet this applies rather to absolute than to the really more pertinent relative findings, such as the comparative coagulation of raw and boiled milk. To what extent these findings in the adult apply in the infant it is difficult to estimate. Since we know, however, that all of the ferments of the adult are present and active in the stomach of the baby it is not unfair to assume that, in all probability, the same relative reactions take place there as in the adult. These limited observations must be taken only as a working hypothesis for further clinical and experimental observation.

The really important question, after all, is not how raw milk and boiled milk coagulate in the beaker or in the stomach, but how the person reacts clinically to raw and to boiled milk. On account of the enormous individual factor in infant-feeding it is peculiarly difficult to generalize, and yet it seems to me that certain clinical differences stand out conspicuously. For many years we used raw milk almost exclusively at Northwestern University; for the last few years I myself have used raw or boiled milk according to what seemed to me indications, and somehow the indications for boiled milk seem to have increased at the expense of those for raw milk. In spite of a natural leaning toward raw milk, I find myself giving a large proportion of my babies, unless in florid health, boiled milk, and have frequently found myself in the position of many a mother who has told me, "I'm very anxious to get away from the boiling (or the soda), but I can't get farther than just so far and then I go back again." In this discussion I use "boiled" and "citrated" milk as practically synonymous because I have been unable to satisfy myself in what respects they differ from one another clinically, although I feel sure that there are differences.

DIFFERENT EFFECTS OF RAW AND BOILED MILK

While it has been a matter of surprise to me how frequently individual babies have no trouble with raw milk when one would expect it theoretically, nevertheless I am convinced that there are certain symptoms which are common with the use of raw milk and which disappear when the milk is boiled. This conviction, primarily the result of clinical observation, antedated the experiments I have here recorded.

1. The hard or tough curd of infants' stools is the most demonstrable clinical difference between raw and boiled milk. It can be produced in every infant by giving it enough raw milk, and it will promptly disappear when the milk is boiled. In feeding babies a considerable quantity of casein, as one must when using simple milk dilutions without cream, such curds are by no means infrequent. Ibrahim[3] found that on simply changing the milk from boiled to raw in the ordinary mixtures of ten of his babies the hard curds appeared in three. Their incidence among different clinicians with the same material is directly dependent on the amount of raw casein they give.

These curds are nearly always accompanied by other evidences of indigestion, especially diarrhea. Exceptionally they are found embedded, like seeds, in an apparently normal or nearly normal movement, but even then they usually represent a state of unstable equilibrium; either they tend to disappear or they increase and the stools become dyspeptic. Whether these curds are the result of some other factor in raw milk that produces dyspeptic symptoms, or whether they themselves mechanically produce these symptoms remains to be demonstrated. The fact remains that they occur on raw milk and are accompanied by indigestion, and that they disappear, always, and with them the indigestion when the milk is boiled.

These curds can occur, apparently (Ibrahim,[3] Courtney[7]) on boiled milk in a much attenuated form. This in no way lessens their significance, clinically, as a raw milk phenomenon, for in several years of search I have only once seen fine thread-like hard curds on boiled milk. That they may occur in small form in diarrheas with rapid peristalsis is quite consistent with the coagulation findings I have reported. Furthermore, one must not forget the possibility of error in the kitchen, or the fact that "boiling" is a term capable of varying interpretations, and that the difference in temperature between milk just beginning to simmer and milk welling up actively is from 20 to 30 F., and that the longer the "boiling" the more marked the influence on coagulation.

7. Courtney, Angelina M.: Studies on Infant Nutrition. II. The Hard or Casein Curds in Infants' Stools, Am. Jour. Dis. Child., January, 1912, p. 1.

2. Diarrhea and dyspepsia. It is a time-honored empiricism that babies with diarrhea, or with any gastro-intestinal disturbance accompanied by diarrhea, and during convalescence from diarrhea, stand boiled milk much better than raw milk. That raw milk will cause diarrhea and dyspeptic stools, and that boiled milk will cure the condition are likewise matters of common observation. In making hard curds experimentally in babies, as recorded in my former paper, indigestion with diarrhea occurred regularly whenever I gave a baby enough raw milk to produce a good output of curds, and quite as regularly there was a prompt return to normal when the milk was boiled. The question rather forces itself on us whether the proverbial constipation from boiled milk is not due to the fact that boiled milk is more readily digested and completely assimilated than raw milk.

3. Vomiting. Here again the evidence is quite positive that many cases of vomiting when raw milk is fed are promptly relieved, as one might expect theoretically, when the milk is boiled or citrated. It is evident that raw milk is peculiarly contra-indicated in the vomiting of pyloric stenosis.

4. Colic and discomfort are among the most manifest and frequent symptoms arising from the use of raw milk. We are all familiar with the fact that a great many babies that are in constant distress, either having a great deal of colic, or crying almost constantly when awake and sleeping restlessly and brokenly, are promptly made comfortable when their food is changed from a raw milk to a boiled or citrated milk, or, what is still more striking, to a condensed milk, either liquid or powdered. If babies could talk they could unfold many a tale of their sufferings in trying to digest a strictly modern scientific, raw-milk formula and of their immediate relief on receiving a very unscientific food from a tin can.

A surgeon of my acquaintance is accustomed to drink about 20 ounces of milk at bedtime. When he takes it boiled he is perfectly comfortable; when he takes it raw he has an uncomfortable night and a diarrhea the next day. Few adults drink so much milk at a time and it is impossible to estimate how frequent such disturbances would occur if they did. The baby, on the other hand, with its far greater proneness to colic and diarrhea, takes six or seven such feedings a day instead of one.

If time permitted, an abundance of clinical evidence could be presented to show how frequent all of these symptoms are when raw milk is fed to an infant, and how often they disappear when the milk is boiled.

The disturbances that I have just enumerated are all of a purely digestive, and not of a metabolic or bacterial nature. In other words, raw milk often produces an indigestion that is relieved when the patient takes boiled milk. Whether this is due alone to the difference in coagulation or to some other difference between raw and boiled milk remains to be determined. The fact that boiled and citrated milk are peculiarly alike in their effect on digestion, though they have nothing else in common except the fact that in them the coagulation of casein is inhibited, would lead one to think that the determining factor in raw-milk dyspepsia is the nature of the coagulum.

CASEIN DIGESTION

This leads, much as one would like to avoid it, directly to the old question, that like Banquo's ghost "will not down," Is the casein of cow's milk difficult to digest by the baby? It is interesting, in the light of these newer observations on raw and boiled milk; to review how this question has been answered in various places and at various times.

Biedert[8] himself, the first great exponent of the difficulty of digestion of the casein of cow's milk, was also the great champion of the protein origin of the curds in infants' stools. That Biedert used raw milk to an extent sufficient to make himself familiar with the "hard tough curds" of our later literature can hardly be doubted when we read his description of *weissbräunlich-gelbliche Brocken und Knollen* that occur with "poor casein digestion." It is interesting to note that he recommended as curative three foods for which Czerny took him severely to task because of their apparent diversity; ramogen (a German proprietary condensed milk), breast-milk and buttermilk, three foods that have, however, one thing in common that now again seems rational enough—they all form a very fine curd in the stomach.

The later German pediatricians with few exceptions came to the conclusion, and correctly so, that the casein of cow's milk produced no recognizable clinical disturbance in their experience, an experience practically limited to boiled milk. If the German pediatricians had used raw milk, this whole question would not so long have seemed so puzzling; nor would it have been answered so positively in the negative.

In England the casein of cow's milk is considered a serious disturber in infant-feeding, but it really gives the Englishman no trouble because he uses sodium citrate to produce a fine curd.

The French pediatrician likewise has no trouble with the casein of cow's milk; in fact, he rather likes undiluted whole milk for his babies, but he lays more stress than any one else on *lait stérilisé*, even though he puts the emphasis on the sterilization rather than on the inhibition in coagulation. It is interesting that almost nowhere else than in France has the idea of using undiluted milk in feeding young infants found any favor, and in France the milk is always boiled, and to some extent in England where it is citrated.

In this country, where some of us use raw milk, some boiled milk, some both and some neither, our ideas have clashed. In using low protein, high fat, raw-milk mixtures the casein gives comparatively little trouble. With simple whole-milk mixtures the high casein is apt to make trouble unless the milk is boiled or otherwise modified. It is again an interesting fact that Jacobi, who has always used simple milk mixtures, notably 1:1 mixtures, has also always boiled his milk, and has used cereal waters as diluents; and in the stormy controversies that have centered about this subject, Jacobi for nearly half a century has stood out alone and unmoved as a rock.

Our own experience at Northwestern University is not without interest in this connection. Our departure from the percentage system, in which we rarely encountered "hard curds," to simple diluted whole-milk mixtures was accompanied in a great measure by a change to boiling the milk. This led us, too, to believe that there was "no clinical picture that we could recognize as casein indigestion." A few attempts to feed raw fat-free milk during the skim-milk epoch when "hard curds" that were evidently casein curds gained their greatest ascendency quickly showed us that our conclusion did not apply to raw milk. Of boiled milk it was as true as ever. It seems to me that we are justified in answer-

8. Biedert, P.: Die Kinderernährung im Säuglingsalter, Ferdinand Enke, Stuttgart, 1905, p. 225.

ing this whole question, in the light of our present knowledge, by saying that the difficulty that the baby encounters in digesting cow's milk casein gives rise to recognizable symptoms only when the milk is fed raw.

The digestive disturbances caused by the casein of raw milk, as here interpreted, are of course wholly distinct from those serious derangements of digestion and metabolism of the fat, the carbohydrates and the whey salts with which we have become so familiar through the works of Czerny and Finkelstein and their schools. Neither have they anything to do with bacterial activity. The questions further of transmission of disease through raw milk, and its influence on the intestinal flora and other similar considerations, lie beyond the scope of this discussion.

EFFECT OF BOILING MILK

I can hardly conclude without a brief consideration of whether boiling makes milk a less valuable or even a harmful food, especially to the infant. This consideration naturally includes four points:

1. Boiling changes practically every constituent of milk and many of its properties. Czerny[5] enumerates eleven changes and yet favors boiled milk, as does nearly every German and French pediatrician. An exhaustive analysis of the whole subject has recently appeared by an English student, Lane-Claypon,[9] who sums up the whole matter in the end by saying that "such small differences as have been found in the nutritive value of raw and boiled milk have been in favor of boiled milk." While this method of studying the subject is not of great value, nevertheless one must admit that there is not one particle of real evidence that babies in general do less well on boiled than on raw milk.

2. Hardly a single modern text-book in English, German or French even mentions boiled milk as a factor in producing rickets, and the whole question would long ago have died a natural death but for the alderman and the philanthropist.

3. Scurvy, that rare, easily recognizable and promptly curable condition, is probably and undeservedly more responsible than anything else for the present strong prejudice against heating milk. The fact that scurvy is commonly associated with the prolonged use of a dead food has led us to blame all dead foods, without careful discrimination as to the nature of the food in other respects. The German and French writers do not consider boiled milk an important factor, but rather conserved and canned foods, or milk boiled for a long time, and even treat scurvy with milk that has been boiled only a short time.[10] There is furthermore so much evidence that scurvy occurs only in children with a peculiar predisposition to the disease that this may indeed be the important factor. The fact that boiled milk is not so important a factor in the etiology of scurvy as are other things is shown strikingly in the fact that scurvy is, if anything, less prevalent in Germany, and much less in France, than with us. While this may be due in part, or wholly, to the alarming popularity in this country of condensed and evaporated milk infant foods, nevertheless the French writers, especially, are unanimous in saying that they do not see scurvy in infants fed on boiled milk. I will quote only one out of many that might be quoted. Anderodias[11] says:

> In the consultations for nurslings in which we feed sterilized milk, as in those of Budin, Variot and Maygrier, one has yet to see an infant with scurvy; while abroad, in England, and in America especially, where laboratory milk is commonly employed, the cases of scurvy are very frequent.

4. Perhaps the most wide-spread objection to boiled milk is constipation. While mothers are much concerned about constipation, the physician has rather a friendly feeling toward it, and in fact often considers it, as compared with diarrhea, rather a domestic than a medical problem.

I cannot refrain from quoting at this point the impressive words of one of the greatest French masters, Budin,[12] in 1905, after years of extensive experience with undiluted sterilized milk, says:

> So-called whole milk dyspepsia is absolutely unknown to us. . . . Neither do we encounter rickets. . . . Since all of our milk is sterilized we see practically no manifestations of tuberculosis. As to scurvy, concerning which so much has been said in recent times, we have up to the present seen not a single case.

CONCLUSIONS

I wish to emphasize the fact that I am not advocating the use of boiled milk, or of raw milk as a routine measure, but I believe that each has its indications. I have endeavored to show that raw milk and boiled milk are clinically very different foods; that the most striking difference between them as shown experimentally is in their reaction to rennin; that the casein of raw milk, unless modified so that it will not form hard, large, coagula offers serious difficulties in digestion that are not present in boiled milk; and lastly that these differences between raw and boiled milk should always be borne in mind in comparing clinical, therapeutic and experimental results in infant-feeding and elsewhere.

4529 Woodlawn Avenue.

9. Lane-Claypon, Janet E.: Report to the Local Government Board on the Available Data in Regard to the Value of Boiled Milk as a Food for Infants and Young Animals, New Series No. 63, Darling and Son, Ltd., Bacon St., E., London, 1912, pp. 60.

10. Since this article was put in type I have seen one case of scurvy in an infant of 9 months with the most marked involvement of the gums that I have ever seen. By feeding it undiluted whole milk boiled for five minutes, and without using fruit juices, etc., the child made just as prompt recovery as I would have expected with the employment of all the usual antiscorbutic measures.

11. Anderodias, J.: La Pratique des Maladies des Enfants, J. B. Baillière et Fils, 19, Rue Hautefeuille, 19, Paris, 1909, I, 315.

12. Budin, Pierre: Manual Pratique d'Allaitement, Hygiène du Nourrisson, Octavo Doin, 8 Place de l'Odéon, 8, Paris, 1905, p. 162.

THE ETIOLOGY AND TREATMENT OF ACNE*

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The growing tendency toward the injection of various vaccines in the treatment of acne gives rise to the suggestion that current notions concerning the etiology and pathology of this common ailment are more or less vague. The subject of this paper has been chosen not only with the purpose of reviewing some of our knowledge of the causes of acne but more particularly to inquire how far our methods of treatment coincide with that knowledge.

What are the known facts as to the causes of acne? First of all, it is a disease of adolescence showing selective preference for neither sex. It is furthermore associated with excessive sebaceous secretion. When we consider the fact that every case of acne is preceded and accompanied by an exaggerated sebaceous flux we are apt to believe that in this condition of seborrhea is to

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be found the alpha and omega of our etiologic knowledge. But though every one with acne has seborrhea, not every one with seborrhea has acne, for one seldom sees acne in subjects over 30 years of age, while seborrhea is seen at any age. It is therefore apparent that, however important the bacteriologic element may be, there are here, as in most bacterial diseases, other considerations to be weighed besides the mere presence of a microorganism.

BACTERIOLOGY OF ACNE

Let us first, however, pass by the attendant conditions which may be necessary for the production of acne lesions and consider only the bacteriologic flora of the disease.

One ordinarily thinks of acne lesions as papules and pustules; but the prime eruptive element is the comedo which precedes them, and more important still is the preeruptive seborrheic filament which may be expressed from sebaceous ducts and which contains numberless microbacilli—the microbacilli of seborrhea of Sabouraud or the *Bacillus acnes* of Gilchrist. These filaments are simply potential acne lesions, for it is only when an occlusion takes place that the comedo and its consecutive lesions develop. It is the application of the ordinary surgical principle of drainage, for it has been noted that with excessive degrees of sebaceous flow fewer comedones are to be found. Even after occlusion has taken place and the comedo formed, many lesions remain sluggishly as such, never apparently showing other organisms than the microbacillus of seborrhea.

When we examine the pustular lesions which supervene we find in smears not only the microbacilli but often various forms of cocci which do not appear to be of the virulence of pyogenic staphylococci. The problem that now arises is as to which organism is responsible for the pus formation. A convenient working hypothesis adopted by many has been to regard the microbacillus as the cause of the comedo and to say that this, secondarily infected with pyogenic cocci, explains the pustules. Against this hypothesis comes the testimony of Gilchrist,[1] Fleming[2] and other capable workers that in a considerable percentage of cases smears have shown and cultures yielded nothing but the microbacillus. Other strong testimony, for instance, the exacerbations in pustular acne after the injection of acne vaccine, has also been adduced to show that *B. acnes* is a pus-producing organism.

Sabouraud,[3] however, while readily conceding that acne pustules exist in which only the microbacilli are found, points out that the staphylococci of gray cultures disappear from the suppuration of acne with remarkable rapidity. A pustule several days old shows no longer free staphylococci, the last visible cocci one can see at all being engulfed by the polynuclear leukocytes. Several days later these last surviving staphylococci can be demonstrated by cultures after the microscopic examination will not be able to disclose them. In general an ordinary acne pustule will remain sterile to culture after fifteen days and if the culture is made on special mediums for the microbacilli nothing but microbacilli will be obtained. The microbacillus remains for a longer time demonstrable than the staphylococcus. Whitfield,[4] also, in combating the contention that the microbacillus causes the suppuration of acne, states that if we accept the view of the pathogenicity of this organism when we find it in some non-inflamed comedones as well as in some actively inflamed ones, we must say that it is pathogenic in some lesions rather than pathogenic in some persons. In support of this he cites a case in which treatment with staphylococcus vaccine cleared up all the pustules, leaving only a face studded with non-inflammatory comedones.

At a later date Western,[5] in attributing to Whitfield the belief that seborrhea is caused by some functional disorder independent of the microbacillus, stated that Whitfield supports this view by the declaration that seborrhea is in black races a protective function against excessive desiccation of the skin by the sun's rays and that it occurs without any infection of the skin with the acne bacillus. He argues further that the age of puberty, which is so commonly the age of acne vulgaris, is an age when vasomotor changes and changes in various glandular tissues are taking place, and that it would be feasible to suppose that the sebaceous glands should partake in this development and in some cases hypersecrete.

From this Western assumes that acne bacilli are merely accidental or casual dwellers in the seborrheic skin, having nothing to do with the overproduction of sebaceous material. In the evolution of the comedo of acne, however, he attributes the formation of the horny portion to the influence of the bacilli by their mere mechanical presence or possibly through their toxins.

Concerning this one organism, the microbacillus, we may choose any one of the following beliefs, all of which have arguments in their favor:

1. It has nothing to do with the production of seborrhea or acne.
2. It has everything to do with the production of seborrhea and acne.
3. It has everything to do with the production of seborrhea and nothing to do with the suppuration of acne.
4. It has everything to do with the production of seborrhea and something to do with the suppuration of acne; in other words, it presents various forms, some of which are pyogenic and some of which are not.

While from the strictly experimental point of view the results of Gilchrist's work would urge the acceptance of the microbacillus as the cause of suppurative lesions, the practical question arises as to whether the treatment with acne vaccine alone gives superior results to that with staphylococci or mixed vaccines, and if so whether treatment with acne vaccine ameliorates the various dermatoses in which seborrhea is a dominant factor. While some workers report fair results in acne, no extensive list of successes has come to my notice in respect to the various seborrheic affections.

If we accept the doctrine that the acne bacillus is the sole cause of acne, we would next be concerned with the staphylococci which are so often encountered in acne lesions that some effort must be made to recognize the part they play.

Smith[6] of Toronto divides acne bacteriologically into three classes, namely:

1. Those due to the acne bacillus.
2. Those due to the acne bacillus and *Staphylococcus albus*, both organisms being present in large numbers.
3. Those due to *S. albus* with practically no acne bacilli present.

1. Gilchrist: Johns Hopkins Hosp. Rep., ix, 409; Jour. Cutan. Dis., November, 1910. See also general discussion.
2. Fleming: Lancet, London, 1909, i, 1035.
3. Sabouraud: Séborrhée, Acnés, Calvitie, Paris, 1902.
4. Whitfield: Lancet, London, 1909, i, 1207.
5. Western: Brit. Jour. Dermatol., xxii.
6. Smith, D. King: Jour. Cutan. Dis., August, 1911.

He goes further and associates each of these classes with a certain type of lesion. In the first class comedones, papules and papulo-pustules are the chief lesions. In the second class are papulo-pustules and pustules, and in the third class deep-seated pustules with marked scarring. This would impress one as being rather schematic, but Smith states that in a certain proportion of cases these sharp lines of demarcation cannot be drawn.

We find then two distinct points of view with reference to the part played by the staphylococci. The one attributes only a secondary etiologic importance to them and totally ignores them in treatment, while the other gives them equal importance with the acne bacilli.

Not only have we to contend with two distinct organisms but we are confronted with subvarieties of each of these.

Südmersen and Thompson[7] have noted differences in the cultural behavior of different strains of the acne bacilli, and Hunt, working at St. George's Hospital, London, has demonstrated corresponding variations as to different strains of staphylococci from acne lesions. Varney[8] has described a micrococcus differing from the *Staphylococcus albus*, which he has found in acne-like lesions. Cedercreutz[9] has described a polymorphic coccus in which diverse forms were due to varying culture mediums and the passage through different animals. The fact that variable forms exist among both acne bacilli and staphylococci, added to the uncertainty that exists in many cases as to which of the two organisms is responsible for the lesions, at once suggests the thought that the only logical procedure is the use of autogenous vaccines in treatment. Men of large experience, however, obtain apparently as good results from stock as from autogenous vaccines. This would seem to indicate that even though there may be variations as to morphologic characters and cultural behavior, suspensions of the different forms are as one in their therapeutic powers.

These apparent contradictions are given prominence at this time because in our discussion of the treatment of acne the question of vaccines will inevitably arise.

CAUSES OF ACNE

Before taking up the subject of treatment let us consider briefly some of the predisposing causes. Besides the adolescent age and the increased pilosebaceous activity which is physiologic at that period, such general states as anemia and chlorosis are often undoubted predisposing causes. In markedly depraved states acne of more pronounced pustular and indurated types is often observed. Derangements of the circulation are so often seen in subjects of acne as to make their connection with the causes seem quite plausible. Frequently the patient exhibits a thick skin and sluggish circulation. At times local circulatory disturbances are brought about directly by cold winds and irritating substances, while at other times the disturbance is produced reflexly by digestive or pelvic disturbances. The local hyperemia which follows the ingestion of certain highly seasoned foods as well as tea, coffee and alcoholic drinks is a commonplace example of the method whereby the digestive apparatus contributes to the formation of acne, while the great number of female subjects who show lesions only at the catamenia, or whose eruptions show marked exacerbations at that time, argues strongly for the fact that pelvic disturbance is a contributing cause to be reckoned with. An observation which may easily be confirmed is that the localization of acne on the chin of a young woman indicates pelvic trouble, while if it specially favors the regions about the nose and forehead it more probably results from digestive disturbance.

Our treatment of acne is bound to depend on what view we take of the etiology of the disease. Unless we have some definite working basis our efforts will be feeble, desultory and ineffective.

A plausible explanation of the events leading up to the acne pustule would seem to be about as follows: Along with the increased activity of the pilosebaceous system there is a corresponding augmentation in the process of keratinization, particularly in those portions of the skin most richly supplied with sebaceous glands. This activity is so great as to produce an occlusion of many ducts and the retention of degenerating epithelial cells and sebaceous material which go to make up the comedo. We may assume that all the comedones contain acne bacilli and some of them cocci. Papules and pustules supervene.

TREATMENT

The task before us is to effect the disappearance of the existing lesions and to prevent the occurrence of new ones.

Treatment may be divided into two classes, general and local, each of which is subdivided as follows:

1. General treatment.
   - A. Symptomatic: Correction of digestive, pelvic, circulatory disturbance, etc.
   - B. Specific: Vaccine therapy.
2. Local treatment.
   - A. Surgical:
     - *a.* Expression of comedo.
     - *b.* Incision of pustules.
     - *c.* Curettage.
   - B. Chemical:
     - *a.* Antiseptic.
     - *b.* Keratolytic.
   - C. Electrical:
     - *a.* *X*-ray.
     - *b.* High-frequency.
   - D. Mechanical.

As to general treatment of a symptomatic character there is no need for debate. Theoretically every one recognizes the necessity of correcting constipation, anemia and various general ills, no matter how pronounced the view held concerning local or specific general treatment.

The question of diet invariably enters into every discussion of the treatment of acne. While a proper diet has its advantages in acne, the same thing holds true in absolute health. Without attempting to minimize the necessity of careful supervision of the digestive functions I cannot help holding the belief that there is no direct specific connection between certain articles of food and acne lesions. The notion so often implied that a glass of milk, a butter-ball or a chocolate drop will cause an efflorescence of acne seems to me to be not at all warranted. The articles of food which preferably should be interdicted are those which cause vasomotor disturbances expressed as reflex hyperemias. Among these tea, coffee, alcohol, highly seasoned foods, condiments, gravies and the like are particularly to be mentioned.

Fats, sweets and starches would appear from my observation to be harmful only when taken in such

7. Südmersen and Thompson: Jour. Path. and Bacteriol., xiv.
8. Varney: Jour. Cutan. Dis., February, 1912.
9. Cedercreutz: Quoted in MacLeod's Handbook of the Pathology of the Skin, London, 1902.

excess as to cause digestive disturbance or in persons who have a special incapacity to assimilate them. In the treatment of acne, as in most diseases, the injunction to treat the patient as well as the disease is well founded.

Now as to the specific treatment of acne with vaccines: The most that is claimed for them is that they effect cures in a certain percentage of cases. Even then they are preferably to be employed in connection with other methods. This is not an argument against their use, however, as anything which contributes to successful treatment is to be welcomed. But it is just this point which needs dissemination. It seems an easy and obvious procedure to inject a suspension of bacteria and await results, but one is assuredly predestined to disappointment in these cases. Such good results as are obtained are reported for the most part by workers who select their cases carefully, who follow up the injections at well-judged intervals and who use appropriate adjuvants to this treatment: in fine, by those who, by repeated and painstaking observations, have developed an effective technic. I would venture the opinion that in relatively few cases is acne cured by vaccines alone.

There are certain difficulties and objections connected with the treatment by vaccines. In the first place it is not by any means easy to apprehend the offending organism by clinical appearances. In a series of smears and cultures made by me I was constantly surprised at finding a preponderance of acne bacilli when I confidently expected cocci and vice versa. This point is perhaps met by those who rely on the use of acne vaccine alone on the ground that the primary infection is with the acne bacillus and that in the absence of such infection the cocci are harmless. The objection that there are varying strains of acne bacilli and cocci is also met by the practical answer that stock vaccines are usually as potent as autogenous ones.

A difficuty to one who has not already developed a satisfactory technic is the determination of the dose of acne bacilli. Gilchrist, who uses chiefly acne bacillus suspensions, formerly used small doses, as 5,000,000, on the ground that larger doses caused exacerbations. In a more recent discussion the remark is attributed to him that larger doses, as 100,000,000, are more effective, and that he has found the small doses to give rise to anaphylactic reaction. The majority of writers, however, still use the smaller doses.

If the sheath of the follicle which prevents further invasion of bacteria also acts as a barrier to the opsonized blood, this may be offset, as Engman[10] has suggested, by incision, manipulation of the walls of the cavity and a cupping apparatus. It may well be that this explains why acne vaccine is sometimes effective in acne and not in the group of seborrheic dermatoses in which the same organism is constantly found but in which these adjuvants are not used. Otherwise we must believe that the real effect is produced by the incision, evacuation and cupping of the lesions. Some writers report patients cured with vaccines after such surgical treatment has been practiced by competent physicians. On the other hand many other patients have been cured by local surgical and medical treatment after the unsuccessful use of vaccines.

The element of time in effecting a cure is also to be considered. Most reports of successes allow from six to nine months and then caution against relapses. My personal experience with other methods leads me to expect a great improvement in one or two months and a practical cure within six months.

What seems to be the most vital objection to the vaccine treatment is that there are more important underlying factors than the mere surface manifestations which reliance on vaccines often influences one to hold too lightly. A system of treatment which neglects the fundamentals cannot be said to rest on a very secure foundation.

The local treatment of acne may be conveniently discussed under the subtitles: surgical, chemical, electrical and mechanical.

Surgical treatment includes the expression of comedones, incision of pustules, and curettage of the thick, indolent skin which is studded with blackheads.

Chemical treatment comprehends the use of such keratolytic and antiseptic agents as resorcin and sulphur. These act selectively on the epithelial cells, destroying the keratosic plugs which occlude the follicles and reestablish drainage, besides having germicidal properties. As a local application I prefer the following lotion:

℞

Zinci sulphatis		
Potassae sulphuratae[11]		
Sulphuris precipitati	āā	ʒi
Aquae		ʒiv

M. Sig.: Apply at night.

Electrical treatment has its advocates. The *x*-ray may be used with two ends in view: first, to increase the blood-supply to the part and improve resistance, or second, to cause an atrophy of the sebaceous glands with attendant diminution of function. The high-frequency current is often effective in reducing the induration of nodular acne by its local influence on the circulation.

Mechanical treatment is a term used to include the process of expressive massage or local manipulation designed to facilitate the drainage of the sebaceous ducts.

From these general principles may be evolved a special method which will be of service in the average case of acne.

I am personally convinced that the keynote to successful treatment lies in keeping open the orifices of the follicles. Whether an occlusion be due to the presence of bacteria or to the excessive proliferation of epidermal cells, which is a physiologic process at the acne age, the fact remains that the establishment of drainage is as vital an indication here as the incision of an abscess is in general. Once the comedo is produced, whether the inflammatory papule or pustule results from one bacterium or more is really beside the question, for if we can restore the potency of the ducts—in other words reestablish drainage—there will be no acne lesion.

In maintaining this open condition of the follicles nothing gives results superior to resorcin. In from 10 to 15 per cent. paste this causes an almost imperceptible superficial exfoliation. If the skin is thick, sluggish and oily, as is usually the case, preliminary washing with the tincture of green soap is of service. The use of hot water, recommended by many, is particularly to be deprecated from the point of view of cosmetic results, since it serves to relax further a skin already deficient in tone and thereby contributes to the formation of enlarged pores. While warm water may be used after incising pustules, to encourage bleeding, the regular use of cold water in washing seems preferable.

When the existing pustules are cured and the superficial epithelial cells somewhat macerated by resorcin, the dermal curet will be of service, and it will be found

10. Engman: Jour. Cutan. Dis., November, 1910.

11. See New and Nonofficial Remedies, 1912, p. 232.

that the comedones are more easily expressed by one of the many suitable instruments offered for that purpose.

In most instances the improvement from these local measures alone is striking. Sulphur lotions may be added with advantage, and any corrective measures of a general nature will undoubtedly aid in maintaining the ground gained. It is here that all attempts at generalization fail, for success comes largely with the skill with which the individual problem is met. Exercise, bathing, massage of the body, or anything which will improve the general health, equalize the circulation and increase the tone of the skin is helpful.

CONCLUSIONS

Bacteria do not figure in the production of acne unless the sebaceous ducts are occluded.

The bacteriologic flora of acne is of no importance except in treatment by vaccines, and vaccine treatment will not be necessary when we are able to provide for the drainage of the ducts.

The logical treatment of acne is local treatment aimed at the proper drainage of the sebaceous ducts, and general treatment that will develop increased tone in the skin.

240 Stockton Street.

TRANSDUODENAL LAVAGE

TREATMENT AND REPORT OF SOME CASES OF CHRONIC DISEASES

M. ERNEST JUTTE, M.D.

NEW YORK

Transduodenal lavage is to the small intestine what enema is to the colon; it excels an enema in its indirect effects in ailments which have no apparent relation to the intestinal tract.

Since my first paper on the subject,[1] I have somewhat modified the technic, which will be described in detail further on.

The aim is to bridge the stomach, so that the irrigating fluid does not trickle into the stomach but directly into the bowel; vomiting will thus be avoided. A rubber tube is introduced into the duodenum; to judge its position some secretion is aspirated and examined as to its origin.

The outfit required consists of a one-sixteenth-inch thin rubber duodenal tube[2] with perforations near, and an olive at, the end, an aspirating bottle, a suction-pump or an ordinary syringe, an irrigator and rubber connections, and, if the swallowing of the tube is difficult, a thin wire or ureteral catheter, which fits into the hollow stem of the olive, to serve as an introductor.

TECHNIC

The patient, with stomach empty, swallows the tube, lies down on his right side on a table and drinks a tumblerful of water. Gravity brings the olive near the pylorus, and peristalsis soon pushes it through along with the water. Connections are then made between tube and aspirating bottle, and between bottle and suction apparatus. Suction soon yields some diluted secretion; examination of this will show whether the tube is in the duodenum or is still in the stomach. In deciding this question the litmus-paper test has been found unreliable, for regurgitation of duodenal contents into the stomach may give a bluish tinge to the test-paper; on the other hand, the duodenum may have been reached and the red paper not have turned blue, because an acid reaction in the upper part of the small bowel is not infrequent. Fortunately, the physical appearance of the aspirated fluid is sufficient to remove doubt, as many tests have shown. A slight stringiness or tenaciousness indicates its intestinal origin except in cases of gastric catarrh. But if the patient has retched while swallowing the tube, some duodenal contents are usually regurgitated into the stomach. If this is suspected, I aspirate as much fluid as can be obtained, let the patient drink more water and aspirate again. This may be repeated once or twice. If the aspirated fluid remains slightly stringy or looks like water and then turns stringy again, which indicates that the olive has just slipped through the pylorus and into duodenal secretion, it is certain that the tube has reached the bowel. That this test is reliable is proved by the fact that on tapping the stomach region, after finishing the lavage, there is no splashing sound of fluid in the stomach.

In undue spasm from hyperesthesia this procedure has the effect of a gastric lavage in that it helps to open the pylorus; in gastric catarrh it removes the mucus, unless too tenacious, and after the water has returned clear, renewed stringiness is a sign that the duodenum is reached.

When the olive is in the right place, lavage may be begun. The duodenal tube is disconnected from the rest of the apparatus and attached to an ordinary irrigator or rubber bag containing about 2,000 c.c. of irrigating fluid. The patient turns on his back and from 1,000 to 1,250 c.c. of fluid are allowed to trickle into the bowel. About ten minutes' time is enough for this quantity to run in and to allow peristalsis to push it gradually onward, so that there will be no distention of any part of the bowel. To make certain of this, the flow can be interrupted once or twice by a few minutes' wait. Light abdominal massage or vibration will stimulate peristalsis, if sluggish. After enough fluid has run in—1,000 c.c. are easily borne—the tube is gently withdrawn and the patient rests a while.

The case will determine the kind of fluid it is best to use. In nervous disorders, general malaise, anemia, rheumatism, indicanuria—in short, whenever it is desired to cleanse the bowels thoroughly—I use normal saline (9 gm. to 1,000 c.c.) at body temperature. To flush out the kidneys, plain distilled water gives a very copious diuresis. In icterus and when fat digestion is impaired the addition of 0.5 gm. pure Castile soap to 1,000 c.c. of saline is beneficial. Of late I have restricted the use of soap to these conditions, as it seems to cause a slight nausea or headache at times. To withdraw fluid from the body a stronger solution than normal saline will be found to do the work. I believe that the addition of astringents to the saline, in catarrhal enteritis, and of quinin in amebic dysentery, will be found beneficial, though I do not speak from experience in these ailments.

By placing near the mouth a glass tube containing a thermometer, the temperature of the fluid can be so regulated that it enters the bowel at body temperature. Respiration, temperature, pulse and tension remain practically unchanged. An increase of the fluid temperature above that of the body will cause a corresponding increase in pulse and tension. This may be used

1. Jutte, M. E.: Transduodenal Lavage: A New Method in the Treatment of Chronic Ailments, with Report of Results in Cases of Asthma and Pernicious Anemia, New York Med. Jour., March 16, 1912.

2. Author's modification of the Bullinger-Oefele tube, which allows of manual introduction.

to advantage in some conditions; but, of course, it should be avoided in chronic nephritis and similar ailments, in which conditions the fluid should be used at body temperature. Lavage should not be given in aortic aneurysm or in severe heart affections. In my experience, no ill effects have followed the treatment. The bowels usually move freely within one or two hours after lavage.

The treatment is easily borne. It is not nearly so unpleasant as the passing of the stomach-tube. The patient may at first object to swallowing the tube, but he soon becomes used to the treatment; it is invariably followed by a feeling of buoyancy and well-being. This is probably due to the flushing out of intestinal toxins.

The following cases will give an idea of the scope of the treatment.

CASE 1.—Mrs. D., aged 32, had chronic icterus, with indefinite but at times severe abdominal pain, of three years' standing. The skin was jaundiced with yellowish tint to sclerae. There was no indican and much flatulence. The patient had been treated by a number of physicians who ascribed various causes for her troubles. She received 1,000 c.c. soap-saline and felt much relieved after the first lavage; had six treatments, at intervals of one week. The color of skin and sclerae is normal. She is cured.

CASE 2.—Mr. H., aged 60, showed an extreme degree of indicanuria and trace of albumin; both disappeared after about six lavages, at intervals of two days. Used 1,250 c.c. soap-saline. A slight recurrence of indican after about eight to ten weeks yielded promptly to repeated irrigation.

CASE 3.—Dr. S., aged 28, had seborrhea of the face of six years' standing; had taken many kinds of treatment. Skin itched and felt like parchment; was very disagreeable. Indicanuria was marked; stools very offensive but normal in frequency. Patient was in good health otherwise. Ten treatments were given within a fortnight; 1,000 c.c. soap-saline or plain saline were used. After second or third lavage, symptoms disappeared and have not returned.

CASE 4.—Mr. Y., aged 50, had spasms of the larynx, especially during the night and woke up with a feeling of suffocation. Patient was small but strongly built; tympanitic; no indican. Neurotic with vague symptoms, best expressed by the term "biliousness." One cleansing of bowel by transduodenal lavage (1,000 c.c. saline) removed all trouble. The patient receives treatment once every two or three months.

CASE 5.—Mrs. C., aged 50, had chronic bronchitis of nine years' standing, and frequent choking spells, especially at night; no indicanuria, but flatulence. Physical condition was otherwise good, but life a burden because of distress. I treated her once a week for two months; used 1,000 c.c. saline. Patient was better after the second treatment and well in two months, except for a little cough now and then. Because of the flatulence she was put on non-fermentative diet and asked to drink about two quarts of hot water a day; this was of great benefit.

CASE 6.—Dr. V., aged 35, had chronic ulcer of duodenum with chronic cholecystitis and acute exacerbation. There was hyperacidity of the stomach and pain and tenderness in the right upper quadrant; no indican, but much flatulence. The patient felt miserable. Gall-bladder reached level of umbilicus. Patient was treated nearly every day for three weeks with transduodenal lavage and in the beginning with gastric lavage; non-fermentative diet and plenty of hot water to drink, to keep the bowels flushed out. Result was quick and satisfactory. Distress disappeared promptly. Sallow complexion changed to normal. A slight tenderness remains, but patient is in good condition otherwise. It should be mentioned that, though with difficulty, he continued to attend to his practice throughout the illness.

CASE 7.—Mr. H., aged 30, had chronic gastro-enteric catarrh, with dilated stomach and relaxed intestine; flatulence; no indican; stools frequent, slimy and thin; received gastric and transduodenal lavage about twenty-four times within one year, at irregular intervals. Diet was restricted to non-fermentative food, but was not adhered to. Stools soon became formed with but little mucus. Results were very satisfactory, considering irregular attendance and disobedience to orders.

CASE 8.—Miss T., aged 25, had been constipated as long as she could remember, sometimes going a week without a movement of the bowel, and never oftener than once in three days. She always had to take laxatives, was treated for two and a half months once a week, with 1,000 c.c. of saline, to which at first a little phenolphthalein or other cathartic was added. Movements soon became more frequent and regular. After the sixth or seventh treatment the patient reported having had an action every day during the past week, without the help of laxatives. The following week was less satisfactory, but from then on to the end of treatment she seldom went a day without a movement.

In recent years the subject of intestinal toxemia has met with much interest. It is not my purpose to review the literature in this short paper; a glance at the current medical journals will show the wide range of diseases, cases of which have been found to be due to excessive absorption of the products of putrefaction and fermentation.

Among these diseases are gastric and intestinal disorders, rheumatism, gout, sciatica, arthritis deformans, functional disorders of the heart, arteriosclerosis, epilepsy, asthma, Bright's disease, cirrhosis of the liver, neuroses, neuralgia, neuritis, primary and secondary anemia, skin diseases, catarrhal inflammation of the mucous membranes, eye diseases, insomnia, neurasthenia, melancholia, dementia and insanity.

Considering that so many diseases have been caused by absorption of toxins it will not be surprising that by flushing out the toxins I have had such uniformly good results as those mentioned in the above case reports and in the cases of asthma and pernicious anemia previously reported.[1]

The removal of intestinal toxemia is the only explanation of the good effects. This supports the modern views of the etiology of many chronic diseases.

Catharsis cannot do the work of lavage, as the reader knows from his experiences with colonic irrigation. By starting the lavage at the pylorus the irrigating fluid reaches every part of the intestinal canal, so that both the small and large bowel are thoroughly and effectually cleansed, and in the natural direction of peristalsis. By an occasional lavage it is easy to keep them cleansed and we may safely let Nature do the rest for the patient. With the cause of his trouble removed and with proper care he has a good chance to improve or to be cured eventually.

Those who have seen the beneficial results are convinced that in transduodenal lavage we have a useful addition to our methods, especially in the treatment of chronic diseases.

253 West Seventy-Second Street.

Lumps-and-Murmurs Diagnosis.—To discriminate between nervous troubles and local diseases requires great tact and experience on the part of the medical man, and yet without such discrimination he may fail in his mission of cure. It will not do to dismiss patients in whose bodies no signs of a definite and significant character can be discovered—that is to say, no abdominal tumor, no pulmonary mischief, no albumin—on the ground of mere nervousness. Such rough-and-ready decision I often call "lumps-and-murmurs" diagnosis. No lump, no murmur, no albumin—no disease. You will agree with me that to practice medicine successfully we must carry diagnosis to a higher degree of refinement than this.—Prof. T. Clifford Allbutt in *Clin. Jour.*

DEATH FOLLOWING THE ADMINISTRATION OF PHYLACOGEN (SCHAFER)

REPORT OF A CASE

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PORTLAND, ORE.

The publicity being given Phylacogen at present, and certain claims which have been made that the administration of Phylacogen is without danger, seem to demand the publication of the following case:

History.—The patient was admitted to hospital care, May 26, 1911, with a diagnosis of articular rheumatism. At this time he stated that he had become sick May 13, following exposure to wet and cold. At that time he had pain in his right foot, with tenderness and swelling. Shortly after this his knees and his other foot became involved. He felt hot, and had sweats at times. He had been subject to similar attacks for eight years, but had had none for the past two years. He denied venereal history, and stated that he had not used alcohol in any form for two or three months, though he had previously been a heavy drinker.

Examination.—At the time of entrance the patient was a powerfully built, well-nourished man, somewhat overweight. He appeared sick and prostrated. Skin warm and moist, no enlarged glands or edema. At this time there were noted a few fine crepitant râles over the bases of the lungs anteriorly. The apex-beat was in the fifth interspace in the nipple line, and there were no murmurs. Liver and spleen were not enlarged. Knees and ankles were slightly swollen, and tender. The urine was acid in reaction, clear, specific gravity 1.020; no albumin, sugar or casts were found.

Treatment and Result.—From May 27 to June 13, the patient was kept in bed on treatment with salicylates, sodium salicylate being used internally and oil of wintergreen locally on the inflamed joints. During this time the temperature by mouth was never above 98.6, and the patient's general condition became greatly improved, though the pain in the feet and ankles improved only slightly. On June 13 it was suggested to the patient that he might derive some benefit from Schafer's Rheumatism Vaccine, which was then in the experimental stage. After having the disagreeable effects of the treatment explained to him he decided that he was willing to try the vaccine, as he was very anxious to improve. Examination on the evening of June 13 revealed no râles over the lungs. The apex was in the nipple line, and the heart tones were clear and regular, with no murmurs. The pulse was strong and regular. White blood-count was 8,800. At 7:35 p. m. 5 c.c. of Schafer's Rheumatism Vaccine, furnished by Parke, Davis and Co., was injected intravenously, as at that time was advised. At 8:05 the patient began to chill, and had a very severe chill, lasting about one hour and thirty minutes, accompanied by emesis and pain in the back. Following the chill the pulse-rate was 144, temperature 99.8, and the pulse was very weak. Stimulation seemed urgent, and was given. The patient became delirious *during the chill*, and was never perfectly rational up to the time of his death. During the remainder of the night the condition became very bad, and death seemed imminent. Emesis was frequent, the pulse was weak and rapid, breathing was labored, and the skin was cold and very cyanotic. The patient was very delirious at this time. By the following day the general condition had improved to some extent, under stimulation, but remained serious, and was practically unchanged during the next twenty-four hours. No urine was being voided, however, and measures to induce urination were unsuccessful. By the morning of June 16 the patient's condition seemed worse, and at this time he was catheterized and 2 ounces of urine withdrawn. This urine contained large quantities of albumin. Cupping was performed over the kidneys, and the urine flow increased during the day. During the next two or three days the condition seemed to improve, though the patient was still irrational, and the pulse was still rapid and weak. June 20, seven days after the injection of Schafer's vaccine, the temperature rose to 101, axillary, and the patient became actively delirious. The white blood-count at this time was 20,000, and examination revealed many subcrepitant râles over the bases of both lungs. During the next day the temperature rose to 104, and the general condition became rapidly worse. The patient died at 8:50 p. m., June 21. The immediate cause of death was assigned as "hypostatic pneumonia." During the time of practical anuria, the symptoms of emesis and hiccup were very prominent. Hiccup was practically constant, and the patient was unable to retain food or liquids. After the urine flow was reestablished these symptoms became less pronounced, and the patient seemed on the way to recovery until the pulmonary condition supervened. Cyanosis was prominent chiefly during the first twenty-four hours.

761 Lovejoy Street.

[EDITORIAL NOTE: It will be noticed that this death from Phylacogen occurred over a year ago. It is now reported because of the following facts: A certain physician to whom Dr. McLean had mentioned the death spoke of it to others, and some of these conversations were reported to Parke, Davis & Company. Thereupon the firm, under date of Jan. 9, 1913, wrote to the physician mentioned remarking that he had been reported as stating that a death had occurred from Phylacogen. The letter continues:

"We feel quite certain that you have been misquoted and we desire to take this opportunity to acquaint you with the statements which have been attributed to yourself. No deaths occurred in ———— hospital, or anywhere else, as a direct result of the administration of Phylacogen. We feel sure that it is far from your desire to do anyone, unwittingly, an injury and that you will appreciate our having directed this matter to your attention. Yours very truly, PARKE, DAVIS & COMPANY, E. R. L."]

TRACHOMA: ITS PROPHYLAXIS AND THERAPY

W. H. HARRISON, M.D.
LAME DEER, MONT.

An experience of several years among the Indians west of the Mississippi, a people sorely afflicted with trachoma, living under varying geographical and climatic conditions, has demonstrated to me that it is a communicable disease, little or not at all influenced in its course, complications, sequelae and terminations by the natural factors of latitude, longitude, altitude, heat, cold, moisture or dryness.

Trachoma, as it is usually found and treated, is a chronic disease. Doubtless there are acute cases of it, but none have ever come under my observation; and in cases in which the diagnosis of acute trachoma has been made, and exhibited as such, it has thus far always been possible to show by the unmistakable hypertrophy of the fornix or tarsal conjunctiva, or both, or by the presence of scar tissue of this membrane, that the supposed acute trachoma was simply an exacerbation or an added infection, either or both of which mark the course of untreated, or even many treated cases of this malady.

The classic division of the management of trachoma into prophylactic, surgical and medical seems almost ideal. Of course the prophylaxis of trachoma is its best and most effective management, and can be accomplished only by the exercise of constant care to prevent the secretions from a trachomatous eye reaching an uninfected eye. To this end all public towels and washbasins should be abolished; in schools, almshouses and penal institutions and among other aggregations of persons, as soldiers, factory employees, miners, etc., the

use of individual towels and basins should be required, or better still, individual towels with flowing water from faucets should be provided, and their use enforced.

Under the surgical treatment will be considered only the measure usual in practice of removing the contents of the granules by expression, which may be done by the use of any one of the many good expression forceps now in use, as Knapp's roller forceps, Khunt's expressor or Noyes' oval forceps. These three instruments will be found ample to meet the requirements for this procedure, in all the various manifestations of trachoma.

It has been thoroughly demonstrated that when the proper subsequent treatment is applied, all cases of trachoma improve much more rapidly after expression than if expression has been omitted. This has been shown in hundreds of cases in which one eye of a patient, in whom the trachoma appeared of the same degree of severity in both, was expressed and the other was not, but otherwise bilateral treatments were carried on in an identical manner. The eye on which expression has been used improves so rapidly that usually within a few weeks one not familiar with the history of the case would declare it to be one of unilateral trachoma or that the trachoma in the eye in which expression had not been used was of much greater severity and of longer standing than that of the other eye. So pronounced has this demonstration been that in many cases within one month the patients, uninfluenced by any suggestion, have asked to have expression used on the other eye. Also, expression should be used in all chronic trachomatous eyes in which there is a varying amount of scar tissue with a vestige of active trachoma present. In many of these cases little or no trachomatous material will be removed from the eyes, but here too a unilateral expression followed by identical bilateral treatments has amply demonstrated the advisability of the expression in all cases. In accounting for this beneficial effect, I believe that the conjunctiva and lids are improved more by the increased and quickened blood- and lymph-supply resulting from expression than by the small amount of trachomatous material removed.

After expression I formerly used ice compresses for several hours on the closed lids of these patients; but some years ago necessity prevented the use of ice compresses, and pledgets of cotton wrung from water as hot as could be borne by the patients were placed on the closed lids immediately after the expression, and changed every two minutes for about thirty minutes; invariably the patients expressed much gratification at the relief given by these hot applications; children aged from 6 to 10 pass out to play at once as soon as these applications are discontinued. As cold never gave the quick and permanent relief from the discomfort of expression that hot applications do, I have used the hot applications exclusively since, in many thousands of cases without a single case of inflammatory reaction. Of course care has been exercised to allay by appropriate measures all symptoms of an acute exacerbation or any additional infection before the expressions are done.

At the end of the application of hot pledgets, a drop of a 25 per cent. solution of argyrol, or some bland oil, may be placed in the eye.

The eye on which expression has been done almost invariably glues together for two or more mornings after this operation, and should be cleansed by having all secretion carefully wiped from the lid margins, canthi and cilia. This should be repeated as often as necessary to keep the eye clean and dry, and a drop of the oil or argyrol may be used two or three times daily if necessary to prevent the lids from gluing together. Expression has shown that in most cases gluing of the lids and increased secretion resulting from the expression, cease almost or quite as soon under the above-described method of cleansing the lids, canthi and cilia by moistened pledgets of cotton as when argyrol or oil is used; therefore I do not use these so often as formerly.

Another practice which I formerly employed was to evert, the morning following expression, the lids in which gluing together of the lids occurred, and to paint them with a 2 per cent. solution of silver nitrate, immediately neutralized by an instillation of normal salt solution; but in some instances in which the silver nitrate solution had to be omitted, the gluing together of the lids and the discomfort were less, so that now I use it only in purulent conditions which continue longer than usual or are of more than ordinary severity. I now believe that the exudate thrown out as a result of expression and as a means of repair was formerly removed by this application of the silver solution, wherefore I now omit the solution in these cases, except when it is indicated by the presence of purulency.

When the gluing together of the lids has ceased, the medical treatment of trachoma begins, and lasts until the whole conjunctiva returns to normal. This in the mildest cases requires many weeks or months; in well-developed cases months and even years; and in complicated cases, though the active trachoma may be eradicated in time, the destructive effects may and usually do remain permanently.

It is now believed that the principle on which the improvement and cure of trachoma depends is the production of an acute hyperemia, often repeated, in the conjunctiva and lids of the trachomatous eye, and repeated at daily intervals until these structures return to the normal, or as near to the normal as severity of the attack and destruction of the parts will permit. The expression of these granules is the therapeutic beginning in the production of this artificially produced hyperemia. This procedure increases the rapidity of the flow of blood and lymph in the whole conjunctiva and lids which, previous to expression, will, on careful inspection of the fornix and tarsal conjunctiva, present the appearance of a tissue in a state of passive congestion.

As soon as the acute effects of expression subside, in from five to seven days, there being no further secretion, inflammation or gluing together of the lids, they should be everted and the whole of the conjunctiva of the fornix and palpebral surfaces firmly and rather rapidly rubbed with a smooth pencil of copper sulphate. This should be done once daily to secure the maximum results, and care taken lest physical injury be added to the already present chemical irritation by the copper sulphate. In order to prevent abrasions and unnecessary irritation with the possibility of causing corneal ulcers, great care should be exercised to prevent the stick from coming into contact with the corneal epithelium. This may be accomplished by pushing the lower lid well up over the cornea after everting the upper lid, in which position it forms an efficient protective cushion to this structure. Assuming that the true principle of the treatment of trachoma is often-repeated acute hyperemia in all the conjunctiva in which there is active trachoma, the copper stick should come into contact daily with all this surface.

If a thorough expression of trachoma has been done properly, and all secretion checked before beginning the use of the stick, and if it is used gently each day and

applied so as to obtain only a stimulating (hyperemic) and not a caustic effect, all or practically all the complaint of the pain will cease by the end of the sixth or seventh treatment; but to secure this happy condition, daily treatments must be made and continued. If a patient stops attending treatments after they are practically painless for a few days, he will be compelled to undergo a similar series of painful treatments before the stick ceases to cause so much pain again. It should also be noted that patients whose lids have not been expressed never throughout their entire course of treatment acquire the same degree of immunity from the pain of these applications as those whose lids have been expressed and treatment begun within a few days.

It has been observed also that trachoma patients do not do well when the eyes are flushed by lotions. No water should be put into a trachomatous eye after expression except to wash out the blood and débris of expression, unless some special reason should occur. Even while there is secretion, the result of expression, most cases are cleansed by the use of moistened pledgets of cotton, and not by flushing the eyes copiously with various solutions. To keep the eye dry, apply copper sulphate as just described. This will insure the maximum improvement in the treatment of trachoma.

Copper sulphate should never be used when there is a corneal ulcer, an inflammation, iritis or an acute exacerbation, but measures to allay these conditions should at once be instituted. As soon as relief is obtained, often repeated hyperemias should be begun and continued.

If the stick has been used too vigorously (caustic), the following day the conjunctiva over the area thus treated will present the condition of a bluish-white pellicle of varying thickness and extent, depending on the too caustic action of the stick. This pellicle may be noted not only by its color and location, but also by the fact that it will roll up into shreds, curdy masses and bunches when the stick is applied again. This condition should never be produced by the use of the copper sulphate, and if found is positive evidence that the applications have been made with unnecessary and unwarranted severity, and the effect has gone beyond the therapeutic hyperemia required to bring about the cure of trachoma. In such cases the copper applications should be discontinued for a few days.

Various copper, mercury and other ointments have been used in treating trachoma, but are considered inferior to the copper sulphate stick; for by the judicious use of the stick just the proper amount of stimulation may be produced. A different degree of application is required not only in different eyes but in the varying stages of the progress in an individual eye.

The massage of the trachomatous conjunctiva by the use of a cotton wound applicator, moistened and dipped into dry boric acid powder, has been given an extensive trial, and no better results were obtained than with the copper, if as good.

A few oculists are known who evert the lids and with the index-finger of the treating hand, covered by one or two layers of sterile gauze, rub all the available and presenting conjunctiva thoroughly with a proprietary powder composed of nuclein from various glands. They claim excellent results, but apparently the only effect which this can possibly produce is that of mechanically causing the hyperemia above discussed and believed to be the chief, or only factor in curing or ameliorating trachoma.

THE SERPENT'S TOOTH IN FORMALDEHYD

WILLIAM E. MORGAN, M.D.
CHICAGO

The reckless freedom with which formaldehyd solution and its derivatives are used by hospital employees, surgeons, health boards, undertakers and food preservers leads me to call attention to the dangers attendant and to place a decided poison label on them.

There is no doubt that a personal susceptibility has much to do with the effects, but the number of unfortunates is becoming so great as to place formaldehyd at the head of the list (not excepting the *x*-rays) as an irritant to the skin and the mucous membranes, and its results are so serious as to leave those tissues peculiarly weak in resistance to other irritants.

It is a well-known fact that the venom of the bite or sting of a poisonous insect like the ant, spider, wasp or hornet is formic acid or one of its compounds, and it is also a matter of common knowledge that some persons are far more affected by the stings than others. It is therefore easy to understand why some are more susceptible than others to the pharmacal preparations which are so universally used at present.

About a year ago formaldehyd was announced as a proper ingredient for the denaturing of alcohol, the amount designated being 1 part of the 40 per cent. formaldehyd solution to 250 parts of alcohol. The result was an almost universal use of this denatured preparation for surgeons' and nurses' hand solutions and general operating-room use.

It was my misfortune in March last (ten months ago) unwittingly to use a liberal quantity of such alcohol on my hands and arms as a final wash before putting on the gloves. During the subsequent operation I felt that one of my arms was being bitten by some insect, and mentioned at the time that an ant must have found its way into the sleeve of my operating-gown. In a few moments more I felt the same sort of sting in the other arm and then several distributed stings on both hands and arms. On finishing the operation and removing gown, sleeves and gloves I found the extensor surfaces of both arms corresponding closely to the distribution of the external cutaneous nerves punctated with numerous circlets of intensely burning and itching fiery red minute papules. I jumped to the conclusion at once that I was the victim of bilateral, symmetrical herpes miliaris and for two weeks afterward considered the case as such, but failed to notice any accompanying neuralgia or other malaise.

The eruption went through stages of vesiculation, weeping, crusting, brownish pigmentation and skin thickening, but no sooner would one patch show signs of improvement than other circlets would appear and go through the same stages. Not until three or four weeks had elapsed was I informed that I was suffering from a chemical dermatitis and that it was due to formaldehyd. Even though I now knew the cause of the irritation I did not realize that I was being constantly reaffected by room fumigation. I had already been obliged to cease operating but was constantly in attendance on patients in their hospital rooms where formaldehyd was used as the universal fumigant.

Like all other chronic forms of dermatitis, the affected surfaces are peculiarly susceptible to heat and cold, alkalies and acids. Soaps made of animal fats, ointments containing animal fats like lanolin or lard, emollient preparations like cold cream and the viscid

liquid preparations so universally used for chapped hands and face, are all of them intensely irritating and provocative of profanity, while the soaps made of vegetable oils and the vegetable or mineral oils themselves are very soothing.

Solutions or ointments containing lead, zinc (unless very weak), tar, oil of cade, ichthyol, the various combinations of salicylates and pyrogallates, are all beneficial temporarily but seem to be provocative of new circles of acute character at the margins of the old.

I find by conference with my associate sufferers that we all have the same experience as to susceptibility to the formaldehyd. The mere presence of the vapor in the room or in the bedding of a patient is immediately recognized by a stinging formication over the whole surface of the body, and it is especially acute on the previously affected parts, so that now in my own case it amounts to an almost insane obsession.

So many members of the medical profession have been invalidated physically, incapacitated for professional work, deprived of livelihood and rendered nervous wrecks by this peculiarly subtle and all-pervading vaporous poison that it should be relegated to the uses of the undertaker and pathologist only and then used with extreme care. If used for fumigation, the room and all its contents should be thoroughly aired for at least forty-eight hours before being again occupied. Specimens preserved in formaldehyd solutions should be kept tightly encased, and the pathologist, to avoid dangers to himself and others, should keep his jars in a room which is constantly aired and not in his general work-room. In addition to these precautions, he should always use some protection to his hands and arms when handling these specimens. Let him be as careful in the use of formaldehyd as he would with a bottle of bromin, for, once stung, repentance is useless.

In view of the fact that formaldehyd vapor is now known by experience to be so dangerously irritant not only to the skin but also to the mucous linings like the conjunctiva and nasal passages, and because its efficacy as a germicide and disinfectant is now seriously questioned by some of our best pathologists and masters of sanitation, may we not wisely discard it altogether as a means of disinfection? We know that when used in 1:1,000 dilution in water or glycerin it is a powerful germicide for some forms of bacteria, and when employed thus with great caution and by carefully feeling our way, it can be made safely useful. To apply it, however, in as strong a dilution as 1:250 in alcohol directly to the surface of the skin freshly disturbed by brush and soap is a malicious insult, and I desire to enter a decided protest against the use of alcohol denatured by so dangerous an ingredient.

Perhaps such alcohol used as a fuel in the mechanical arts might with caution be safe enough, but woe betide the mechanician with a chapped or cracked skin who should perchance spill some of it on his hands or wet them with it!

I may add in passing that I have practically exhausted the pharmacopeia and I fear have also exhausted the patience and suggestions of my medical friends in my efforts to overcome the trouble; but I feel that now I am on the right road, which is outlined as follows for the possible benefit of fellow-sufferers.

1. Avoid formaldehyd as you would a pestilence.

2. Wash the hands or affected parts not more than once a day with luke-warm water and a vegetable oil soap such as Castile. Avoid green soap made with a fish oil, or any animal oil soap. At other times use olive-oil or cottonseed oil for cleansing purposes. I have found that a little phenol (carbolic acid) added to the oil (10 minims to the ounce) keeps it free from becoming rancid and adds to its soothing qualities.

3. Apply to the affected parts two or three times daily an ointment made up of zinc oxid, 1 part, starch, 2 parts, and petrolatum, 8 parts. During the vesicular and acute stage this should be applied without friction; but after the epithelium becomes dry and the derma somewhat thickened and scaly, the ointment can be rubbed in and the zinc reduced somewhat.

4. Avoid all powders except sterilized starch, and then during the vesicular stage only.

5. Rubber gloves cannot be worn for more than from three to five minutes without producing marked irritation by reason of the confined perspiration.

6. Wear a cotton protecting sleeve or glove or both, night and day until thoroughly healed. Silk or woolen goods cannot be allowed to touch or rub the affected parts without producing irritation.

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Therapeutics

ECZEMA IN INFANTS

It may be well to recall for a moment the many varieties of eczema which may occur. If it begins with burning and tingling sensations and a redness, if red points then develop over the orifices of the skin glands or hair follicles, and if the surface of the region then feels a little raised and papules develop, these later passing into vesicles which soon burst and cause an exudate, acute eczema is present. This acute inflammation of the skin may stop at almost any of the above stages, or it may go on to the formation of crusts, either dry or sticky; even a purulent exudate may occur. There is no deep ulceration in eczema, and the inflammation occurs generally in patches. This moist condition may continue for some time or dry scabs and crusts may occur.

The duration of eczema is absolutely uncertain. There is probably always a continued attempt of the skin to heal under the crusts, and then scaling or a sort of desquamation occurs with more irritation and itching of the part, although there may have been some itching in the beginning. This chronic healing and drying with more or less acute irritation may go on for months or even years, and the skin may become thickened in regions that are permanently eczematous. Such skin is not healthy, and injury to it in any way may cause a more or less deep ulceration. Among the lesions of the eczema appear more or less irritated marks due to scratching, and this scratching causes more irritation and may prevent the eczema from healing.

It has long been decided that eczema is not purely a local disease but is generally caused or influenced by the character of the food and its digestion. The relation of eczema to indigestion in infants seems to be even closer than in adults, as shown by Drs. Towle and Talbot[1] of Boston. As eczema is of frequent occurrence in infants and often almost impossible to cure, any suggestion as to its etiology and hence the possibility of the removal of the cause will be welcomed.

The investigations by these clinicians have so well shown the relationship of infantile eczema to indigestion

1. Towle, Harvey P., and Talbot, Fritz B.: Am. Jour. Dis. Child., October, 1912, p. 219.

that they are justified in urging the necessity of making an examination of the stools as a routine diagnostic measure whenever troublesome eczema occurs.

Serious eczema in infants may be divided into two classes: one in which the process is acute and inflammatory, with a tendency to exudation, while the second is more or less chronic, without much exudate, but with redness and infiltration, and the skin is more or less dry, scaly and harsh. The latter form is also characterized by greater itching, while in the more acute variety the itching becomes more pronounced as the inflammation heals.

The more acute form of this eczema in infants occurs on the face and forehead, generally on both sides, and, according to Towle and Talbot, is frequently associated with indigestion of fats, and occasionally with indigestion of carbohydrates. The more chronic forms of eczema in infants they find more likely to be associated with indigestion of protein foods.

If the examination of the stools shows a large amount of undigested fat or fatty acids, the amount of fat taken with the food should be diminished. If, on the other hand, the stools show that sugar and starch are not well digested, these foods should be diminished. If the eczema is more chronic in character, the amount of protein in the food should be reduced, changed or modified.

The methods of examination of the stools are macroscopic, microscopic and chemical. The macroscopic, of course the simplest, is more or less suggestive, is fairly accurate and takes but little time. Towle and Talbot say:

> The most common fat stool is soft and contains in varying abundance soft curds which have been found to be composed of fat in the form of fatty acids or soaps. These curds look like small particles of undigested milk, imbedded in a mucus which is usually more or less greenish. The "soap stool," a second form of fat indigestion, is light yellow or whitish, has a shiny surface and a soapy appearance, and is almost entirely composed of fat. There is a third but less common type of stool almost wholly composed of fatty acids, which presents the appearance of Indian meal.
>
> An acid, burning stool is an indication that the starches, which under normal conditions are converted into sugar and in this form absorbed, have, owing to a faulty digestion, undergone a further reduction by which the sugar has been broken up into lactic, acetic and succinic acids. If an acid stool is stained with Gram's or Lugol's solution the starch granules present are stained blue.
>
> In the case of lactalbumin and whey, protein indigestion gives no clinical signs in the stools; but the presence of tough, bean-like curds indicates that casein digestion is disturbed.

Of course more scientific examination of the stools may be made chemically and microscopically, but macroscopic observations as above described may give the clue as to what the diet should be for an infant who has eczema. It has often been noted that infantile eczema sometimes persists for months in spite of all kinds of treatment and then gradually disappears without the reason for the cure being recognized when, on account of the child's age alone, the diet is changed.

Besides the eczema in children due to a mistake in diet, we should probably recognize an eczema of nervous origin, which may be the type which occurs on children's faces during teething.

The inflammations of the skin that occur in parts where there is chafing, or where there are irritating secretions or excretions, are of local origin, and anything that protects such parts will stop the inflammation.

Another type of eczema that occurs in young children is that of the scalp, which is generally an eczema of the sebaceous glands characterized by the yellow, more or less sticky crusts that form on the child's head. It is generally in patches, more or less numerous.

An eczema may be generally diagnosed by the fact that it occurs in patches, is likely to occur on parts of the body subject to irritation, is likely to be worse in cold weather than in warm, may show several degrees of inflammation on the same patient (i. e., several types of eczema), and generally causes itching.

The eczema that occurs in young children in the form of fissures or cracks in the skin, either around the ears or at the angles of the mouth, is likely to be the type that is improved by the administration of small doses of thyroid gland substance, 0.05 gm. (1 grain) daily combined with such local and general treatment as indicated. Unquestionably, some forms of eczema in children clear up much more rapidly under such thyroid treatment than without it. Thyroid should not be given in any acute form of eczema, however, but only in the very chronic type.

In the treatment of infantile eczema, besides the modification of the diet above suggested by Towle and Talbot, all external causes of irritation must be sought and removed or prevented. All causes originating in parasites and pus must be excluded. It is too well understood to need much repetition that if the child is not an infant and has begun to eat general food, all irritant substances that are likely to cause urticaria may also be a cause of eczema and should be removed from the diet. Some of these foods that should be excluded from the diet of children are pastry, fried foods, many berries, griddle-cakes, chocolate, nuts and, perhaps for the time being, most of the fruits. The possible reflex irritation of the skin by drugs should be remembered.

It is certain that in all forms of eczema, especially in children, the diet that is the simplest, the most bland, the most suitable for the age of the patient, and the most readily digested is the one that will allow the most speedy cure of the disease.

The hygienic surroundings of the child are of great importance. Cold and dampness tend to make the disease worse, while overheating and an atmosphere that causes the child to be irritable makes the disease worse. Generally the irritated part does better when protected from the atmosphere, but the clothing should not cause overheating and should not cause irritation of the skin. That the reverse of cold atmosphere is beneficial to infants with eczema has been shown by the use of the hot-air cabinet for these little patients. Severe cases of infantile eczema have been treated with success by giving the patients daily for five or ten minutes the dry hot-air treatment in a cabinet.[2]

Just what clothing, whether cotton, linen mesh or silk is best to be next to the child's irritated skin, is to be decided according to the particular child, the nature of its surroundings and the period of the year in which the disease has occurred.

A most important thing to consider in the treatment of infantile eczema is how cleanliness of the body shall be obtained. Water certainly aggravates the condition, and, if a child is unduly or unwisely bathed, a recurrence of a cured eczema may be caused. Sometimes warm water may be allowed if it is rendered alkaline by sodium bicarbonate or sodium bicarbonate and borax. Some-

2. München. med. Wchnschr., 1912, No. 49, p. 85.

times oatmeal or bran-water baths are given and found to be non-irritating. Many times it is better not to use water at all on the irritated parts, but to cleanse with a soft cloth moistened with a bland, thin oil. Perhaps the best is almond oil, unless it is desired to leave a film of oil over the surface, when olive oil may be used.

If there is a considerable amount of persistent pustulation, and local germicides, either in ointments or washes, are unsatisfactory or inadvisable, stock vaccines may be used; it seems to have been proved that stock streptococcus and staphylococcus vaccines are as successful as autogenous vaccines. There seems to be no other excuse for using vaccines in eczema.[3]

However thoroughly one may be convinced of the great influence of abnormal constitutional conditions or of disorders of internal functions in the production of eczema, the great importance of external and local treatment must never be overlooked or forgotten. The local treatment has for its object primarily the relief of itching which is a disturbing element, both mental and physical, that cannot be realized by one who has not suffered from the disease. The second object of the local treatment is the restoration of the skin to health.

While adults may be ordered or induced not to scratch the irritated part, in children argument and advice is useless, and the young child must be prevented from scratching the eczematous regions. To this end his finger-nails must be kept short, and the inflamed parts thoroughly covered, if the disease is at all severe. If the disease is more severe and the child is inclined to tear at even the covered parts, his hands must be wrapped in linen so that they will not sweat; or it may be best to put a splint, as a box cover, on his arms so that he cannot flex his elbows. It is better to do something like this than to pin the child's arms down to its sides, thus preventing the child from any movement of the arms at all and causing him to be more restless. It may even be best to put his hands into celluloid mittens that come for this purpose. These are probably the coolest dressings that his hands may have. If the hands are eczematous, of course they will be covered by the applications and dressings used.

An application designed for local use in eczema should contain some remedy designed to relieve the itching. The most useful remedies are menthol, phenol (carbolic acid) or some less pure tarry preparation. Other preparations used are astringent, such as zinc oxid, bismuth subnitrate, bismuth subgallate, alum preparations or lead preparations. As a general rule when eczema is acute, soothing remedies are indicated; when it is subacute or chronic, stimulating applications may be made. The external applications may be in the form of ointments or powders. One of the simplest of the soothing and antipruritic applications is:

℞	c.c.		
Phenolis liquefacti	5	or	♏ lxxv
Olei lini	500		O i

M. et Sig.: Apply externally.

The black wash, which consists of a dram of calomel to a pint of lime-water, has been recommended and much used, but although there is little danger of poisoning with mercury, it would seem unwise to use this preparation on a child. Also, lead washes and lead ointments are perhaps just as well not used, as lead absorption and poisoning could occur.

3. Simpson, C. A.: Infantile Eczema, THE JOURNAL A. M. A., April 6, 1912, p. 993.

Another soothing wash is the following:

℞	Gm.	or	c.c.
Mentholis	1		gr. xv
Sodii bicarbonatis			
Sodii boratis .....āā	10	or	ʒ iiss
Glycerini	100		f℥ iij
Aquae, q. s.....ad	300		f℥ x

M. et Sig.: Dilute with three parts of warm water and use as a wash.

This preparation not only allays itching, but may aid the healing process.

Various lime-water washes are used, some of which contain powders, such as:

℞	Gm.	or	c.c.
Zinci carbonatis precipitati..	10		ʒ iiss
Glycerini	15		f℥ ss
Liquoris calcis	25	or	f℥ i
Aquae rosae, q.s.....ad	200		f℥ vij

M. et Sig.: Shake, and apply externally.

Zinc oxid may be used in place of the precipitated carbonate of zinc; 5 c.c. of phenol may be added to the above prescription, or half a gram of menthol, as more active antipruritics.

Another sedative is the following:

℞	Gm.	or	c.c.
Zinci oxidi	20		ʒ v
Phenolis liquefacti	2		f℥ ss
Glycerini	25	or	f ʒ i
Aquae, q.s. ad.....	200		f℥ vij

M. et Sig.: Shake, and apply to affected parts several times daily.

While glycerin is valuable in dilute solution for most skins, some skins are irritated by it, even when used in very small amounts. In such the glycerin must be omitted from the prescriptions.

Starch may be used as a cooling dry powder application, or starch solutions may be used.

When the inflammation is less active and the irritation not severe, the following ointment may be used:

℞	Gm.	or	c.c.
Phenolis liquefacti	50		♏ vijss
Zinci oxidi	5	or	gr. lxxv
Adipis benzoinati	30		ʒ i

M. et Sig.: Apply externally.

If deemed advisable, the phenol may be increased in strength, especially if the itching is severe.

A frequently used preparation, especially in more or less subacute or chronic eczema, is Lassar's paste, a type of which is as follows:

℞	Gm.	or	c.c.
Acidi salicylici	1		gr. xv
Zinci oxidi			
Amyli .....āā	10	or	ʒ iiss
Adipis benzoinati.....	20		ʒ v

M. et Sig.: Use externally.

This ointment makes a more prolonged coating of the part than the previous ointment.

When stimulation seems to be required, especially in the scaly eczemas, resorcin may be used as follows:

℞	Gm.		
Resorcinolis	50		gr. vijss
Unguenti aquae rosae	30	or	ʒ i

M. et Sig.: Use externally.

The preparation of unguentum resorcini compositum of the National Formulary is another efficient prepara-

tion of resorcin, more stimulating than the previous, and tending to cause a healthy inflammation on a chronic, slow-going inflammation. The ingredients of this preparation are:

Resorcinol
Zinc oxid
Bismuth subnitrate, each ..... 3 parts
Oil of cade ..... 6 parts
Petrolatum and
Lanolin, enough of each to make in all ..... 50 parts

It is a frequent tendency among those who write prescriptions, and especially among dermatologists, to combine two kinds of ointment bases in ointments for use in skin diseases, both an animal and a "mineral fat," as notice the above National Formulary preparation. It would seem bad prescription writing and a bad combination. Either the "mineral fat" is the better, or the animal fat is the better, certainly not both.

Tarry preparations are still largely used by many physicians who treat diseases of the skin, both as antipruritic and as stimulant. The following is a simple tarry preparation:

℞	Gm.		
Picis Liquidae	1		gr. xv
Petrolati	30	or	ʒ i

M. et Sig.: Use externally.

The official unguentum picis liquidae contains 50 per cent. of tar. The unguentum picis compositum of the National Formulary contains 4 per cent. of the oil of tar, 2 per cent. of the tincture of benzoin, and 2 per cent. of zinc oxid. If the tar ointment is not strong, it may be rubbed into the chronic eczema patches, not simply spread on them.

When there is a general erythematous inflammation, dry powders such as common starch, flour, bismuth subnitrate, bismuth subgallate and various talcum powders are useful.

Sometimes camphor solutions are of value in itching, and do not cause quite so much burning as menthol preparations. Camphor may be even used as a powder for this purpose, such as:

℞	Gm.		
Camphorae	3		gr. xlv
Zinci oxidi	10	or	ʒ iiss
Amyli	20		ʒ v

M. et Sig.: Apply externally.

There are various official and unofficial ointments and medicated plasters for the treatment of eczema, but they mostly contain one or more of the ingredients already mentioned.

Belladonna mixtures have sometimes been used when the itching was intense and the region in trouble not large. Such ointments should, however, very rarely be used in children, lest poisoning from absorption occur.

If there is a troublesome eczema about the nails or on the finger-tips, sometimes rubber cots to cause sweating and softening of the hardened tissue are of value.

Seborrheic eczema of the scalp, which is frequent and occurs without inflammation and generally without any internal cause, is troublesome and can be cured only by persistent good treatment and care. Changes in diet are of no avail in this form of eczema.

In the first place, the crusts on the scalp should be softened with a sterile oil such as olive oil or a thin petroleum oil, or possibly the olive oil may contain a small percentage of salicylic acid, as 1 or 2 per cent. Castor oil may be used, if preferred, either made sterile or containing the same percentage of salicylic acid. After the crusts have been gradually softened, they may be removed and then gauze saturated with the oil used may be applied to the regions affected and kept in place by any simple light air-pervious cap. Sometimes the scalp is best cleansed, after softening, with ordinary good soap, as castile, or with the official green soap (linimentum saponis mollis).

One of the above preparations of resorcinol may be applied to the scalp after the scabs have been removed, or a sulphur preparation may be used, as:

℞	Gm.		
Sulphuris praecipitati	3	or	ʒ i
Petrolati	25		ʒ i

M. et Sig.: Use externally.

Persistent careful cleanliness and gentle stimulation of the scalp will generally prevent a recurrence of this inflammation.

DISTURBANCES OF THE HEART

(Continued from page 519)

ARHYTHMIA

While this term really signifies irregularity and intermittency of the heart, it may also be broadly used to indicate a pulse that is abnormally slow or one that is abnormally fast, a rhythm that is not correct for the age, condition and activity of the patient. Irregularity in the pulse-beat as to volume, force and pressure, except such variation in the pulse wave as caused by respiration, is always abnormal. While an intermittent pulse is of course abnormal, it may be caused in certain persons by a condition that does not in the least interfere with their health and well-being.

As to whether a slow or a more or less (but not excessively) rapid pulse in any one is abnormal depends entirely on whether that speed is normal or abnormal to him. As a general rule the heart is more rapid in women than in men. It is always more rapid in children than in adults, and generally diminishes in frequency after the age of 60, unless there is cardiac weakness or some cardiac muscle degeneration. The average frequency of the pulse in an adult who is at rest is 72 beats per minute, but a frequency of 80 is not abnormal, and a frequency of 65 in men is common; 60 is infrequent in men but normal, while up to 90 is not abnormal, especially in women, at the time the pulse is being counted. It should always be considered that in the majority of patients the pulse is slightly increased while the physician is noting its rapidity. Anything over 90 should always be considered rapid, unless the patient is very nervous and this rapidity is considered accidental. Anything below 60 is abnormally slow. In children under 10 or 12 years of age anything below 80 is unusual, and up to 100 is perfectly normal, at least at such time as the pulse is counted and the patient is awake.

Referring to the first article in this series on disturbances of the heart, it will be noted that many physiologic factors must enter into the production of the normal regularity of the pulse. The stimulus must regularly begin in the auricle, must be perfectly transmitted through the bundle of His to the ventricles, the ventricles must normally contract with the normal and regular force, the valves must close normally and at the proper time, the blood-pressure in the aorta must be normally

constant to insure the perfect transmission of the blood to the peripheral arteries and to insure the normal circulation through the coronary arteries, and the arterioles must be normally elastic. The nervous inhibitory control through the vagi nerves must also be normal, and there must be no abnormal reflexes of any part of the body to interfere with the normal vagus control of the heart.

While the heart beats from an inherent musculonervous mechanism, nervous interference easily upsets its normal regularity. It may be seriously slowed by nervous shock, fear or sudden peripheral contractions, spasm of muscles, or convulsive contractions, or it may be stimulated to greater rapidity by nervous excitement. It may be slowed or made rapid by reflex irritations, and it may be seriously interfered with by cerebral lesions; it may be made very rapid, or any pressure on the vagi centers in the medulla oblongata will make it very slow. Various kinds of poisons circulating in the blood, both depressants and excitants, may affect the rapidity or the regularity of the heart. Therefore, if it is decided that a given heart is abnormally slow or abnormally rapid, or is decidedly irregular or intermittent, the various causes for such interference with its normal activity must be investigated and admitted or excluded as causative factors.

Many investigations of the rhythm of children's pulses have been made, and some of the later investigations seem to show that not more than 40 per cent. are regular, the remaining 60 per cent. varying from mild irregularity to extreme irregularity.

Scientifically to determine the exact character of a pulse which is discovered by the finger on the radial artery and the stethoscope on the heart to be irregular, tracings of one or more arteries, veins and the heart should be taken. As previously stated in other sections of this series, two synchronous tracings are more accurate than one, and three of more value than two in interpreting the exact activity and regularity of the heart.

The cause of an irregularly acting heart in an adult may be organic, as in the various forms of myocarditis, in broken compensation of valvular disease, Stokes-Adams disease, coronary disease, auricular fibrillation, cerebral disease, and toxemias from various kinds of serious organic disease. The cause may be more or less functional and removable, such as tea, coffee, alcohol, tobacco, gastric indigestion and intestinal fermentation or putrefaction; or it may be due to functional disturbances of the heart such as that due to what has been termed extrasystole, or to irregular ventricular contractions. A frequent cause of irregular heart action in women, more especially of increased rapidity, is hyperthyroidism.

There may be an arhythmia due to some nervous stimulation, probably through the pneumogastric, so that the pulse varies abnormally during respiration, being accelerated during inspiration and retarded during expiration more than is normally found in adults. This condition is frequent in children, and is noticed in neurotic adults and sometimes during convalescence from a serious illness. Nervous and physical rest, with plenty of sleep and fresh, clean air so that the respiratory center is normally stimulated, will generally improve this condition in an adult.

Extrasystoles causing arhythmia give a more or less regularly intermittent pulse, while the examination of the heart discloses an imperfect beat or the extrasystole which is not transmitted or acted on by the ventricles, and hence the intermittency in the peripheral arteries. This condition may be due to some toxemia, nervous irritability, or some irritation in the heart muscle. Good general elimination by catharsis, warm baths to increase the peripheral circulation, a low diet for a few days, abstinence from any toxin that could cause this cardiac irritation, extra physical and mental rest, sometimes nervous sedatives such as bromids, and perhaps a lowering of the blood-pressure by nitroglycerin if such is indicated, or an increase of the cardiac tone by digitalis if that is indicated, will generally remove the cardiac irritation and prevent the extrasystoles, when the heart will again become regular. It should be carefully decided whether there is beginning heart-block or beginning Stokes-Adams disease, in which case digitalis should not be used. This disease is not frequent, while extrasystoles of a functional character are very frequent. Sometimes this functional disease persists without any apparent injury to the individual as long as the ventricle does not take note of these extra auricular systoles and does not also become extra rapid. If the ventricle does contract with this increased rapidity it soon wears itself out, and the condition becomes serious.

In this kind of arhythmia, if there are no contraindications to digitalis, it is the logical drug to use from its physiologic activities, slowing the heart by its action on the vagi and causing a steadier contraction of the heart; clinically this treatment is generally successful. If digitalis should cause the individual heart to become more irritable, it is acting for harm, and should be stopped.

One has but to refer to the enumerated causes of irregular heart action to determine the treatment. In that caused by extrasystole the treatment has just been suggested. In irregular heart caused by serious cardiac or other lesions the treatment has already been described, or is that of the disease that has a badly acting heart as a complication. If the irregularity is caused by toxins, the treatment is to stop the ingestion of the toxin and to promote the elimination of what is already in the system; how much of the irregularity was due to the toxin and how much is inherent disturbance in the heart can then be determined. If the cause of a toxemia developed in the system, perhaps most frequently from intestinal putrefaction, increased elimination and a regulation of the diet will cure the condition.

The valvular lesions most likely to cause irregular action of the heart are mitral insufficiency or mitral stenosis. The lesion that is most likely to cause auricular fibrillation and more or less permanently irregular heart is perhaps mitral stenosis. Another frequent cause of more or less permanent irregularity is the excessive use of alcohol.

While an irregular pulse and an irregular heart are always of more or less serious import, still, as the extrasystoles of the auricle are better understood and more frequently recognized, and the habits and life of the patients (most frequently men) are regulated and revised, frequently a pulse and heart that would be rejected by any medical examiner for an insurance company becomes, in a few weeks or a few months, a perfectly acting heart, and remains so sometimes for years. It also is not quite determinable whether a heart that is so misbehaving has a recurrence of such misbehavior more readily than a heart that has never been so affected. However this may be, the cause having been determined or presumed by the physician, it should be so impressed on the patient that he does not again repeat the insult to his heart.

(To be continued)

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SATURDAY, FEBRUARY 22, 1913

COW'S MILK AND THE STAGE OF LACTATION

In order to carry out intelligently and successfully some of the practices of milk modification which are now widely employed in the field of infant-feeding an accurate knowledge of the composition of cow's milk is indispensable. This applies not only to the qualitative character of its constituents but likewise to the proportions of the well-known foodstuffs that make up the mammary secretion. The variations of cow's milk with reference to different breeds of cattle — for example, the specific distinctions between the milk of Holsteins and Jerseys — are well appreciated in a general way. It is also usually admitted that the feeding of cattle may have some influence on the properties of their milk, although these dietary effects, as well as the individuality of the animals, are of minor import in respect to its composition except in relation to the fat content. With regard to another factor, namely, the influence of the stage of lactation on the quality of the milk, the available data are more limited; or at any rate information on this point has not yet become a part of the general information which is diffused in respect to milk. The available facts pertain for the most part to a single constituent of the milk, the fat. There are few elaborate and comprehensive records in which any attempt has been made to eliminate the influence of the varying feed of the animals when all or even a majority of the conspicuous milk constituents have been studied during an entire lactation period.

Information of the desired character has lately been furnished by the Bureau of Animal Industry in cooperation with the Missouri Agricultural Experiment Station.[1] Four different breeds were studied, the ration of each cow being kept of uniform composition throughout the lactation period. In regard to its effect on the composition of milk, the lactation period may be divided roughly into three parts. The first stage includes the interval from the time the secretion of milk begins until the composition reaches a normal standard for milk, and covers a period of from three to six weeks. After the birth of the calf the colostrum is first secreted, which contains, as is well known, an extremely high percentage of protein and of ash as compared with that in milk. This composition changes rapidly during the first four days. Milk is ordinarily considered to be fit for food about the fifth day, although the changes in the composition continue for some time. The percentage of total protein, as well as of fat, as a rule continues to decline for from three to six weeks. One prominent characteristic of the fat during the first stage is the extremely large globules which are found in the beginning of the period and which decline rapidly in size during the first few weeks. During this stage the composition of the fat also shows an irregular variation from the normal. The second stage in the lactation period begins when the composition of the secretion becomes normal milk, and continues until a point is reached when a rapid decline in the quantity of milk produced begins. Ordinarily this occurs within from about six weeks to two months from the end of the lactation period. The length of the second stage will depend on the length of the time the cow produces milk, and to some extent on the quantity. If the complete lactation period of the cow be ten months, the second stage will cover under average conditions about six and one-half months. During this interval the composition of the milk remains in general quite uniform. In the third stage, beginning from six weeks to two months before the end of the lactation period, the composition of the milk changes widely from the average for the entire period, and while the extent of these changes varies with different animals, they are uniform to the degree that they may be reasonably counted on to occur under all normal conditions. The percentage of total protein rises rapidly, followed by the fat, although on the average the protein makes slightly the larger increase. During this stage the total protein content may be one-third higher than that present during the middle of the lactation period. The casein and albumin remain in practically the same proportions.

It is evident, from the wide variations caused by the lactation period, as the government investigators point out, especially in the content of protein present, that it is of considerable importance in many cases to consider the stage of the lactation period of the animal furnishing the milk in connection with its use as food. For infant-feeding, especially, the amount of protein present is one of the important questions; and since a variation of one-third may be expected in the protein due to the stage of lactation, this factor should be understood and taken into account in modifying milk for infant-feeding. When mixed milk of a herd is used, wide variation due to this cause would naturally be less liable to occur; but when the source of supply is one animal or a limited number all in the same stage of lactation, the importance of this factor as influencing the composition of the

1. Eckles, C. H., and Shaw, R. H.: The Influence of the Stage of Lactation on the Composition and Properties of Milk, Bureau of Animal Industry, Bull. 155, 1913, pp. 88. Copies may be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents.

milk would be considerable. It has been observed that near the end of the milking period frequently a strong abnormal taste and odor are developed in cow's milk on standing. The cause of this has not yet been determined, although the evidence points against the action of bacteria as the effective factor. The taste and odor are not uncommon in the milk of cows kept under commercial conditions.

CHEMICAL RESEARCH ON THE BRAIN

Whenever histologic investigation gives evidences of conspicuous changes in the microscopic appearance of a tissue or organ as an incident of some pathologic manifestation, an attendant alteration in the chemical make-up may be anticipated with considerable confidence. Modern methods of histologic examination in which staining reactions are the dominant feature are, of course, based on chemical factors. Altered tinctorial capacities of tissue elements therefore postulate the existence of altered chemical relations. The tissues have changed in composition. One of the aims of pathologic research must be to correlate disturbances of function with altered morphologic conditions and variations in chemical composition; and the ideal will be reached when this interdependence is clearly made out and suitably interpreted in its bearing on the varieties of morbid processes. It was to this goal in respect to the chemistry of the nervous system that the talented young American investigator, Waldemar Koch of Chicago, was successfully directing his energies prior to his lamented untimely death last year.

Koch has shown that the brain exhibits pronounced alterations in composition in cases of dementia praecox. Pighini[1] has now reported distinct variations from the normal content of brain constituents in cases of progressive paralysis. The proportion of water is increased, while the quantitative relations of the significant lipoid constituents are decidedly upset. In these abnormal brains cholesterol is increased along with a decrease in the phosphatids of the kephalin type, so that a sort of "cholesterol degeneration" may be postulated, if this expression may be used in a sense analogous to the term "fatty degeneration." What this accumulation of cholesterol may signify is reserved for the future to disclose. Pighini calls attention to the undue quantities of this lipoid in the cerebrospinal fluid of paralytics, and believes that it may have significance for the outcome of Wassermann tests performed on this fluid.

For the present the distorted relative proportions of at least two prominent brain lipoids — cholesterol and kephalin — in a definite pathologic manifestation of the nervous system must serve as a suggestion of the possibilities of future work in this field. The acknowledged difficulties in the attempt to master it need not minimize its importance or discourage continued effort. As an illustration of the prospects we may recall Fränkel's suggestion that kephalin, with its great avidity for oxygen and consequent rôle in the tissue respiration of the nervous system must have a conspicuous physiologic significance. It is not illogical to expect, therefore, that a pronounced decrease in kephalin as it has been observed in these brain abnormalities will damage the functions of the organs to which it naturally contributes. Undue speculations of this sort are dangerous, however, if they are permitted to bias our views beyond what known facts justify.

1. Carbone, D., and Pighini, G.: Beitrag zur chemischen Zusammensetzung des Gehirns bei der progressiven Paralyse, Biochem. Ztschr., 1912, xlvi, 450.

WOMEN MOTORISTS

Women motorists are increasing in numbers; and this fact is said to be stimulating manufacturers to build cars with especial reference to feminine abilities and limitations. "Cranking up" has heretofore certainly been a man's work; and the chauffeur's fracture, occasioned by this maneuver, has not been rare. When the self-starter has been perfected, however, as it now promises to be, and becomes simple, inexpensive and reliable, about the last mechanical impediment to a woman's handling her own car will be removed. Even now the clutch, which used to require a man's muscular power to disengage, generally needs only the strength which the average woman can easily exert, and new devices make it possible for women to adjust tires. This suggests a brief discussion of the limitations of motoring for women and the not infrequent sequelae, some of which apply to men as well.

Driving a motor car from April to November should be a healthful recreation, both physical and mental, for many women, provided the exercise be within reasonable limits, speeding being eschewed and the car a runabout or light roadster — one, at any rate, not too heavy for a woman to handle. The "weaker sex" are naturally quick of eye and deft of wrist, two qualifications, aside from sufficient strength, which are needed. It may be said, however, that women are in general more excitable and of less steady judgment than men, shortcomings which may prove disastrous in emergencies, or which might render it advisable to confine motoring efforts to areas outside the crowded portion of the larger cities. The rougher contact of men with the every-day things of life, their greater participation from boyhood up in sports and athletics generally, better fit them to meet the exigencies of motoring. General athletic training for women and indulgence in sports such as swimming, rowing, tennis or the work of the gymnasium which develop command and coordination of muscle and brain, would to an extent supply this lack in women, and no doubt many women with such training may become efficient motorists. It may be possible that it should be limited to women with such training. To them it offers much pleasure and benefit, perhaps, and may be indulged

in when the other forms of exercise or sport are unavailable or unsuitable. Rational motoring affords opportunity for plenty of fresh air, with improved appetite and increased zest of life. The ever-changing scenes may soothe and satisfy the emotions, and hitherto unfamiliar aspects of civilization may interest and divert from introspection.

There is, however, quite a formidable array of troubles, nervous and otherwise, which have been charged against motoring, and which point to the fact that the sport at best is a somewhat strenuous one for women. The ailments for which the motor-car may be held responsible are due almost entirely, however, to speeding and to the fear of accidents which might be engendered as the result of this.

The "auto-eye" is a spasm of the ciliary muscles (which govern accommodations for distances); to this those who have errors of refraction are specially prone; speeding over an unknown country, through devious roads, the sight being constantly and rapidly attracted by objects now near and now in the distance, makes an abnormal strain on the visual mechanism.

Wind and dust, coupled with high speed, induce any degree of conjunctival inflammation, from a hyperemia to a contagious lesion; the wearing of goggles largely obviates this. Auto-leg is a cramp due to sitting in one position for hours, while the veins and muscles are under strain from consecutive shocks and joltings over bad roads.

The sequelae of nerve strain and nerve exhaustion, such as hysteria and neurasthenia, are not rare, especially among young women who motor extensively. Such attacks come on relaxation after strain in a rapid run over many miles, but they are not ordinarily serious in healthy women; and yet in those not up to par as to their nervous systems, they have grave sequelae. The excitement of motoring may appeal to such women. The ever-increasing stimulation inherent in speeding may sooner or later end in prostration. For such cases entire rest and complete abandonment of motoring are absolutely essential. All women absorbed in motoring should from time to time consult their physicians regarding conditions which they are unable to account for.

Edgar[1] considers that the unfavorable influence of motoring on pregnancy has been somewhat exaggerated, and that it has in many instances been unfairly set down as abortifacient. The middle third of pregnancy is more liable to be thus affected than any other. Delavan[2] considers that while pulmonary diseases should in theory be much increased by motoring, practically such is not the case; indeed, the car properly used is a valuable therapeutic agent. Nevertheless, acute catarrhs and advanced tuberculosis with abnormal temperature certainly contra-indicate motoring.

1. Edgar, J. C.: The Influence of the Automobile on Obstetric and Gynecologic Conditions, Am. Jour. Obst., June, 1911.
2. Delavan, G. B.: The Influence of the Use of the Automobile on the Upper Air Passages, Med. Rec., Aug. 20, 1910.

ANOTHER ALEXIS ST. MARTIN

It is sometimes forgotten that the epoch-making researches of Pawlow on the physiology of digestion, the secretory functions of the glands connected with the alimentary tract and the accompanying remarkable nervous coordination, were carried out on the lower animals. In their experiments on dogs with gastric fistulas the Russian investigator and his school have brought out the influence which not only taste and smell, but sight as well, exert on the alimentary secretions in general and the flow of gastric juice in particular. Furthermore they showed that in the stomach special food materials in contact with the mucosa may exhibit a specific effect on both the quantity and the composition of the gastric juice. Food introduced directly into the stomach without the knowledge of the animal is attended by a far tardier secretion than results when the same aliment is ingested in the usual way. For this reason we have been taught to lay great stress on the initial "psychic" secretion as an almost indispensable introduction to subsequent phases of digestion.

Several opportunities have been afforded since the publication of Pawlow's investigations to test his conclusions on man. The cases have almost invariably involved a gastrostomy operation in consequence of a stenosis of the esophagus. We referred recently[1] to Professor Carlson's observations. A new case, reported by Albertoni and Tullio,[2] offers some additional suggestive indications of the behavior of the human stomach. Their subject, in contrast to most of the others whose history has become a part of medical literature, was accustomed to introduce his nutriment in the form of a semifluid mixture of milk or bouillon cooked with bread, together with additions of egg and wine. As the stomach was thus filled a feeling of agreeable fulness ensued. The influence of habit in relation to the sensation of hunger is well brought out. Whenever the appropriate time for the usual repast was allowed to pass even for a brief interval, a sense of exhaustion and emptiness of the stomach was at once experienced and could be readily dispelled by the introduction of nourishment. Thirst likewise was relieved in a few minutes after the direct introduction of liquids into the stomach. The occurrence of hunger at meal-times is most natural, for, as the regularity of defecation indicates, the alimentary tract has habits. As Cannon has pointed out, gastric activity in the form of the contractions associated with hunger returns at the usual meal-time as the result of custom. By taking food regularly at a definite hour in the evening for several days, a new hunger period can be established.

In distinction from these well-developed sensations of hunger, thirst and satiety the specific psychical response to foods of different flavor and composition was far less

1. The Stomach in Hunger, editorial, THE JOURNAL A. M. A., Feb. 8, 1913, p. 448.
2. Albertoni, P., and Tullio, F.: Mem. d. r. Accad. d. sc. d. Ist. di Bologna, 1911-1912, ix, Series 6a.

conspicuous. Bitter or sweet left no distinction in respect to gastric sensation when the varied flavors were introduced without allowing the subject to taste them. Bouillon or saline were not mentally discriminated when they were not previously tasted. But the stomach evidently can make sharp chemical distinctions. The presence of bouillon provoked a speedier appearance of acid in the stomach contents, and the patient appreciated in a vague way that bouillon afforded him a more agreeable digestion; it "braced" him up. Bread, likewise, left a peculiarly favorable impression; and wine was effective in proportion to its alcoholic content. These striking impressions deserve notice as something more than mere whims of the individual. Pawlow and others have shown that milk and meat extractives (bouillon) are almost the only common alimentary substances which, by themselves, provoke efficient gastric digestion even when they are introduced into the stomach without the knowledge of the animal. Bread is known to be comparatively rich in a gastric secretory stimulant; and alcohol has a demonstrated record as a direct incitant of secretion. Almost instinctively, therefore, Albertoni's patient has selected for his regimen those dietary substances which have an immediate effect on gastric secretion independent of the gustatory or psychic factor. The normal course of the digestion and the excellent utilization of the nutriment may therefore be attributed in good part to its composition, which corresponded to all the physiologic exigencies of perfect alimentation despite the exclusion of the processes which are ordinarily initiated in the mouth.

The Italian investigators have placed considerable emphasis on the quantitative aspects of the diet of their unique subject. Greatly emaciated at first, he had gradually brought himself back to his original satisfactory nutritive condition. As his weight increased he was observed gradually to reduce somewhat the intake of milk, bread and eggs until a stationary level, so to speak, was reached. This occurred with a diet of about 3,000 calories, containing more than 100 gm. of protein — figures in accord with the long-accepted standards of physiologists. Ordinarily our food intake is regulated by a large number of external factors which may modify the appetite and control our habits of eating. In this fistulous individual the diet might be regarded, in the opinion of Albertoni and Tullio, as corresponding to a real requirement of the organism, for it has not been modified in quantity by any agreeable or other sensations such as ordinarily attend the usual manner of eating. One might debate, however, whether so limited an experience suffices to permit any profound decision in the many-sided question of the true nutritive need of mankind. Far more striking is the fact that the requirement was so satisfactorily met in this instance in respect to both the quantity and the quality of food by a kind of dietary judgment reached independently of the sensory data and psychic impressions that ordinarily guide us at meal-time.

THE LAYMAN, MEDICAL ADVERTISEMENTS AND THE NEWSPAPER

Whenever one has been identified for some time with any movement for the promotion of the public welfare, or with a propaganda directed against cherished traditions or acquired habits of a people or a class of the population, it is wholesome to engage in retrospect. The success of any worthy reform must always be measured by the effects which it actually secures rather than by the motives of those who are ambitious in its behalf. No one will deny the persistency of THE JOURNAL in stating its policy with regard to what it considers to be undesirable or fraudulent advertising. The campaign in behalf of the same honesty in the advertising columns of our medical journals that is avowedly cultivated in their editorial and original contributions has been carried on unrelentingly and without regard to usual courtesies of statement or the interchange of meaningless compliment. It has been an exhibition on our part of what we firmly believe to be the unvarnished truth and a readiness, we trust, to do justice and to make reasonable allowances.

The effects of the propaganda are beginning to manifest themselves slowly yet forcibly. The probable outcome has been sufficiently obvious to keep the advertiser himself alert; and the study of the changes which the wording of many an advertisement has undergone in recent times would form an interesting chapter in the psychology of the subject. A dietary product long brought to the attention of the medical and lay reader under the name of *diabetic* food has deftly been altered to read *diatetic* food. Such illustrations mean little by themselves; but they indicate the response which is unconsciously or stealthily being made to the pressure of publicity and enlightened public opinion.

It is gratifying, above all, to discover evidences of progress and changing sentiment in strictly lay circles. Our attention has been directed to this recently by a contribution published in one of the dailies of the eastern United States. The article in question[1] exhibits a keen analysis of the problem of medical advertising in the lay press. The editor can no longer shirk responsibility for a fake medical announcement or the advertisement of a fraudulent claim or worthless product. Let us follow the writer's argument. We base our value of news items, or editorial utterance, he says, on the reputation of the newspaper in whose pages they appear. Why is it that when a newspaper's advertising is considered, too often we find an entire change of policy and an almost complete absence of responsibility? We hold a newspaper responsible for the news it gives us; we respect its editorial opinions as representing its editor's honest thought; why should we not hold him responsible for the wares he allows to be advertised in the columns of his paper? The better newspapers are quite unanimous in excluding the advertise-

1. Street, J. P.: A Question of Advertising, New Haven (Conn.) Morning Journal-Courier, Feb. 8, 1913.

ments of "get-rich-quick" concerns, or fake mining schemes, and of obscene or immoral literature. Rarely nowadays do we find the "personal" column of a newspaper to be simply a more or less disguised directory of panders and prostitutes. In these respects the daily press has shown a constant improvement; but when we consider the advertising of medicaments generally we find another story. It is true that the majority of our leading magazines keep their advertising columns wonderfully clean, this is also true even of some of the religious papers which in the past have been notorious offenders. But the daily newspaper, with few exceptions, lags far behind in the crusade for decent advertising.

A statistical analysis of the "medical advertising" in the four daily newspapers of a city of 130,000 inhabitants in an eastern state showed one advertising thirty-nine patent medicines or quack treatments, another thirty-five, another twenty-seven, and the fourth two. The latter record for "clean" advertising is equaled by few of the newspapers of the country; yet, strange to say, the sheet in question promulgates the fame of Lydia Pinkham in its columns, indicating how difficult it has been to eradicate the last traces of this preposterous group even in an issue which contains the forceful statement that "self-medication, except for the most trivial disorders, is generally foolish and futile; in some cases it may be positively dangerous."

One of the four newspapers under investigation showed 105 medical advertisements of a questionable type in one day — 255 inches, equivalent to over twelve columns of the newspaper. An argument has sometimes been made in apparent good faith that patent medicines are a boon to the poor man. "It is remarkable," writes the incisive contributor above referred to, "how many money-making manufacturers keep the good of the poor man constantly in view!"

An insidious innovation has lately crept into the sporting pages of some of these papers. "Old Dr. So and So" has gained space there to promise relief to boys and men in familiar terms. The evil of the suggestiveness of such advertisements is well appreciated (and the editor of the paper is sometimes most outspoken about it in another place). Their appearance on the page most read by boys and young men shows "rare business acumen, but complete disregard of public decency."

The tide is turning; and the day can be foreseen when it will no longer be a difficult problem for the editor of a daily newspaper to reconcile the pleadings of his editorials with the practices of the counting-room of his publisher. Until then the campaign of education must be continued.

A Filler

To fill these holes with sundry bits
Would rob the wisest of his wits.
They come in such a lot of sizes
That when they're filled the great surprise is
—that we were able to get anything to fit the blessed cubby-holes!—*Inland Printer*

Current Comment

THE DOCTOR AGAIN PICKED OUT FOR AN EASY MARK

The latest get-rich-quick scheme presented to the unsuspecting doctor is the opportunity to make money from confiding aspirants for nurses' diplomas. If we may judge from the comments of physicians who send us the circulars, the utter crudeness of the scheme will save most men from the trap. It offers physicians the alluring possibility of inveigling friends into presenting sixty dollars to the Rhode Island College of Nursing. In return for this fee, the candidates are led to believe that they may be turned out efficient graduate nurses after a year's study by correspondence with the school — and all this without giving up their regular occupation, if need be. In addition, the promise is held out to them of an opportunity to do postgraduate work at a hospital to be established by this corporation in the dim and distant future when a sufficient number of the gullible ones of this earth shall have been induced to part with their money. But the most captivating point in the scheme is this: The optimistic philanthropists who have founded this "college of nursing" declare that they "want to give you $100 each year during the balance of your life." That is, for every one that the doctor succeeds in inducing to purchase a paid certificate for the course, he will receive one share, ostensibly worth $20, of the valuable stock of the company. And what doctor cannot find in his community five young ladies a year who wish to become nurses? Then comes the final joker. The doctor may instruct these probationers (mayhap 'twill ease his conscience) by placing them on his less fortunate cases. A neat and pleasing scheme for money-making; surely one must be hypercritical who asks if the rewards are sufficient to repay the most pliant conscience for its surrender!

ENZYMES AND THE PATHOLOGY OF INFANTILE NUTRITIVE DISORDERS

In diseased conditions in which symptoms of disturbed nutrition manifest themselves, it has been a common though by no means logical hypothesis to postulate the absence or deficiency of certain enzymes on which the organism is usually dependent for adequate and correct functioning. Particularly has this been true in the case of digestive disturbances. No one would assert that there is never any justification for such conclusions. The failure of pancreatic secretion may at once be cited as an illustrative instance of a serious withdrawal of essential enzymes from the digestive functions. The primary defect in such conditions, however, is usually not to be sought in a failure on the part of a gland to produce enzymes but rather in some interference, such as obstruction, through which they fail to reach the goal of their activities. In the field of alimentary disorders of children, in particular, there has existed a tendency to correlate some of the manifold pathologic upsets with a lack of some of the digestive enzymes. The reason for this doubtless lies in the assumption that the equipment of the organism in

respect to these agencies is perfected along with other features of growth, so that the appearance of this or that enzyme might easily be delayed owing to some imperfection of bodily development. We know that certain functions are not manifested at birth and are initiated only as the growth of the individual proceeds and the full complement of its powers is brought into exhibition. Why not postulate a similar delay in the case of the digestive enzymes to account for the pathology of nutrition in the very young? An examination of the stools of both healthy and sick infants for residual enzymes justifies the belief that, with a few possible exceptions, a deficient functional capacity of the digestive glands cannot be made to account for common disorders of the alimentary processes. Lust[1] has gone a step further in Professor Moro's pediatric clinic at Heidelberg and examined the various organs of the gastro-intestinal tract which are concerned with the elaboration of digestive ferments. This search for alimentary enzymes in the tissues of children failed to disclose any noteworthy lack of these digestive agencies, even in cases of pronounced nutritive disorder. It is scarcely necessary to repeat here the various categories of enzymes which were sought and found in this investigation. The outcome of Lust's examination strengthens the conviction, rapidly gaining ground, that in the pathology of the digestive disorders of infancy the enzyme question plays a very subordinate rôle.

THE ARTIFICIAL RIPENING OF BITTER FRUITS

It is well known that bananas are removed from the tree and shipped while in a green condition and are ripened on the stalk in warm store-rooms. Other fruits which are artificially ripened are persimmons and dates. It is found that dates in California and Arizona only exceptionally reach maturity, but, as shown by experiments of the United States Agricultural Department, they can be matured by artificial means. In an interesting article Prof. Francis E. Lloyd[2] explains the chemistry of this ripening process and how it is brought about. He explains that fruits, the astringency of which in the unripe state is due to tannin, after ripening contain just as much tannin as before, but that it has undergone a change or combination with some other substance which prevents the solution of the tannin in the saliva and hence obviates its astringent taste and action. This effect may be brought about, in the case of dates and persimmons, by means of heat, alcohol, carbon dioxid or acetic acid. Tannin is a colloid which readily dissolves in water or in the juices of the mouth. It exists in such fruits as dates and persimmons in separate little sacs or membranous cells which swell and burst when brought into contact with water, thus permitting the tannin to escape; the familiar astringent bitter taste is the result. When the natural ripening process takes place or when heat or any of the chemical agents named is applied, a coagulation of the contents of the tannin sacs takes place, so that when the fruit is eaten the tannin is not dissolved at all or is so slowly dissolved that the bitter, astringent taste is not observed. The case of the California oranges recently condemned by the federal government under the Food and Drugs Act does not come in the same class. Oranges have no starch to be converted into sugar; hence the sweating process to which these oranges were subjected merely colored them artificially instead of ripening them. Indeed, the ground on which the government seized and disposed of the fruit mentioned above was that it was misbranded as naturally ripened fruit. Fruit actually ripened by artificial means cannot be said to be unwholesome.

1. Lust, F.: Ueber den Nachweis der Verdauungsfermente in den Organen des Magendarmkanals von Säuglingen, Monatsh. f. Kinderh., 1912, xi, 411.
2. Lloyd, Francis E.: Science, Dec. 27, 1912, p. 879.

MEDICAL EDUCATION IN IOWA

After the close of the present college year, Iowa will have but one medical school, the College of Medicine of the State University of Iowa. In 1907 there were five separate institutjons in that state located in Iowa City, Des Moines, Keokuk and Sioux City. Hereafter, medical education in Iowa will be entirely under the direct control of the State University, and will be financially supported by that university—a parallel to what has already taken place in other states, as for instance Minnesota, Indiana and Colorado. This has been made possible through the recent decision of Drake University to merge its medical school at the close of the present session with the College of Medicine of the State University. Among the reasons given for this decision[1] in a published interview with President Bell, the following statement was made:

> The merging of the medical school of Drake with the state university will relieve the institution of a great burden that was being carried at tremendous sacrifice, and will enable it to emphasize those departments which are recognized throughout the country as doing the highest grade of work. Hence this action does not mean a step backward from an educational point of view, but rather a long step forward. The trustees of the institution are gratified that they are able to merge these departments with those of a sister institution in Iowa that has unlimited means to develop a first-class medical school, and maintain it in that position.

It will be remembered that three years ago it had been decided to close this school,[2] but the action at that time resulted in the raising of a sum of money which led to the hope that in time the school might be amply financed. The sum raised, however, has proved to be quite inadequate, and meanwhile an increase in the entrance requirements resulted in a material reduction in the number of students and a corresponding decrease in the college's income. It was quite clear, therefore, that if the college was to maintain a standing equal to that of the State University medical school a very large endowment was necessary. Since the securing of that endowment seemed impossible, the faculty again decided to close the school, this time to merge its interests with the College of Medicine of the State University, rather than to continue as other than a college of the first grade. While it is a matter of regret that so high-grade a school as the Drake University College of Med-

1. See also page 619, this issue.
2. Drake University and Medical Education, editorial, THE JOURNAL A. M. A., April 23, 1910, p. 1381.

icine finds it necessary to close its doors, nevertheless this merger is clearly in the interests of better medical education in Iowa. How strange it is that the colleges which are willing to close in the interests of better standards of medical education are usually those which are themselves of so high a grade! Schools with no such valid excuse for their existence usually require more vigorous methods to arouse their sleeping consciences. This action by the medical faculty of Drake University is but another instance showing the characteristic decisiveness of high-grade medical men in doing the right thing even though it means the laying aside of personal advantages.

PUBLIC PROGRESS VERSUS MEDICAL STAGNATION

One of the most encouraging phases of the campaign carried on by the American Medical Association against fraud in medicine is the rapidly changing attitude of the lay press toward "patent medicine" advertising. In the Propaganda for Reform Department in this issue, we give a few quotations from some of the many letters received by THE JOURNAL from the editors or publishers of newspapers and magazines regarding the attitude of their publications to the nostrum evil. These letters are worth reading. We cannot help feeling that if our profession were fully alive to the tremendous change that has taken place in public opinion on the subject of fraudulent medical advertising, the present disgraceful conditions within the profession itself would soon be things of the past. Medical journalism would be forced, by the pressure of professional opinion, to clean its own Augean stable.

EDEMA OF THE LIVER AND NEPHRITIS

There is a wide-spread belief that the edemas which are so frequently associated with renal disease stand in direct relation to the inability of the kidneys to excrete compounds which normally leave the organism in the urine. In so far as this is true the accumulation of products of metabolism and the retention of salts might be looked on as the causes of osmotic changes which manifest themselves in the form of edema. There are probably few instances, however, in which a single factor is responsible for such fluid retentions. The mechanical factor of blood-pressure is rarely sufficient to occasion edema, although it may be a contributory feature. The remote local factors, such as the increased permeability of the capillary walls, as well as some of the local changes in reaction emphasized by Fischer, presumably play a more conspicuous part in the edemas associated with nephritis than is commonly assumed. Edema of the liver and gall-bladder sometimes occurs in association with nephritis, and the question of the relation between the renal and the hepatic factors is thus presented for consideration. Does the hepatic edema depend primarily on the kidney alterations, or is it a simultaneous manifestation attributable to a common cause? Experiments which Professor Opie of the Washington University Medical School in St. Louis has conducted afford an interesting contribution on this point.[1] They indicate that the liver edema is coincident with the production of the renal lesion and not the result of disturbance of renal function. By the use of cantharidin, which is well known to be capable of causing acute nephritis in man and animals, he has shown that such drugs exert an important influence on both the liver and the flow of lymph. A poison which is capable of causing nephritis increases the flow of lymph from the thoracic duct; it acts as a lymphagogue. Pathologic separation of columns of liver cells from adjacent capillaries may simultaneously occur. A fibrinous coagulum may arise within the sinuses of the regional lymphatic nodes, the shreds of fibrin radiating from partially or completely necrotic cells. Such factors in turn induce an obstruction within the regional lymphatic nodes, and edema results. It is a simple illustration of the result of distention of the lymphatics of the liver through obstruction attributable in the beginning to the effect of a toxic agent on this organ. The observations thus support the view, as Opie maintains, that dropsy in association with nephritis is caused by the action of an irritant which injures the kidney and simultaneously increases the permeability of vessel walls elsewhere in the body.

THE PHYLACOGENS — A MENACE TO VACCINE THERAPY

In two, three or four years — according to the amount of money that the exploiters are willing to spend in advertising the shotgun mixtures sold under the proprietary name Phylacogens — these products will have been relegated to that drear limbo of therapeutic shadows whose substance was born of men's thoughtlessness, or worse, cupidity. The existence of the Phylacogens, commercially speaking, is due to the vast resources of the corporation that fathers them. The time will come, as it comes with all therapeutic agents whose value rests on no more substantial basis, when the combined experience of an exploited profession will overcome the counterforce of lavish and prodigal advertising. Then the Phylacogens will cease to interest any but the historian. Possibly that time may come sooner than we expect, for the physician of to-day is not so easily misled as the physician of yesterday and, more important yet, the public of to-day is more critical than the public of a decade ago. But whether it takes four years or one year for this therapeutic rocket to flare itself out, the tragedy lies not in the widely heralded reputed successes, but in the many unreported failures, perhaps deaths, following the use of experimental novelties. Bacterial derivatives, like the Phylacogens, are poisons, powerful, dangerous and little understood. Yet physicians are asked to use them on evidence submitted wholly by those who will benefit financially from their employment. Human nature being the same in the medical profession as elsewhere, the untoward effects will seldom or never be reported; the deaths which follow their administration will be ascribed, unconsciously per-

1. Opie, E. L.: Lymph Formation and Edema of the Liver with Experimental Nephritis Produced by Cantharidin, Jour. Exper. Med., 1912, xvi, 83.

haps, to "unforeseen complications." More than this, the confidence of the public in serotherapy — a therapy which, scientifically applied, holds greater hope for the treatment of human ills than any other yet discovered — will be rudely shaken by this rash use of dangerous and unproved products. How much of a setback scientific medicine will receive from the orgy of advertising in which the exploiters of the Phylacogens are at present indulging can only be surmised. Ten years from now, when the Phylacogen craze is recalled to their memories, thousands of our readers will blush with shame for the profession which tolerated it.

THE TOXICITY OF WHITE LEAD

Occupation is undoubtedly the most important factor in the etiology of lead-poisoning; and among the occupations the most dangerous are those in which lead is freely handled. This applies particularly to working in white lead and lead colors. The grinding of white lead with oil was formerly a large source of lead-poisoning, because the pigment was dry, and consequently the grinding-mill attendants and the lead-work laborers inhaled lead carbonate dust; but since in many factories the paint is now made with the lead carbonate in the moist state, by the gradual displacement of the moisture with oil during the process of grinding, this source of danger has decreased. There is said to be more danger in the process of grinding basic lead sulphate into paint-oil than there is when grinding the moist lead carbonate in oil. The dangers incidental to the manufacture of red lead are extremely serious. A recent writer in one of the trade journals[1] reports that a large decrease in plumbism in the manufacture of white lead has followed the abolition of female labor and youthful labor in England. The decrease is also consequent on ventilation, the use of respirators, overalls, enforced cleanliness and the avoidance of lead dust. No material increase in the cost of manufacture has resulted, but death and suffering have been averted. It is always gratifying to learn of progress in combating occupational diseases, especially when, as in the lead industries, it has been so difficult to induce those employed to cooperate to their own sanitary advantage.

1. Line: Drugs, Oils and Paints, xxviii, 255.

Competitive Athletics.—Under the American system of making specialists out of a few individuals, the primary idea of exercise would seem to tend to the creation of a desire on the part of a few to excel in doing feats of skill and strength, and to the many a desire to view such displays; the rounding out, uniform, and healthful development of all individuals being a secondary instead of a primary consideration. It follows that for many individuals there is created no actual liking for exercise, these persons never having really felt the well-being that comes from a proper dosage, exercise for the athletes having been made a drudgery in order to obtain excellence in condition and teamwork, all pleasurable sensations being lost in the lust for conquest. The athletes, therefore, unless they make their living thereby, soon give up their methods of obtaining exercise because of dislike, or inability to gather others together for a contest, or from lack of a field of play, while the non-athletes, having learned no other form of athletic pleasure than that of viewing others perform, go the way of the ignorant.—Murphy in *U. S. Nav. Med. Bull*

Medical News

ALABAMA

Personal.—Dr. J. B. Haralson is reported to be ill at his home in Fort Payne.——Dr. Alston Maxwell has been elected health officer of Birmingham, vice Dr. George Rau, Tuscaloosa, resigned.

New Dispensary for Anniston.—A free medical dispensary was opened at Anniston early this month by the Salvation Army and to this service Drs. J. W. Landham, Anniston, and Baxter Rittenberry, Hartsells, have agreed to give their services free.

Marion Sims Centennial.—The centennial of the birth of Dr. J. Marion Sims, January 25, was celebrated by the Montgomery County Medical Society with a banquet at the Gay-Teague Hotel, Montgomery, at which Dr. Thomas M. Owen, director of the Alabama Department of Archives and History, spoke on the life and work of Sims in Alabama and especially of his achievements in Montgomery where he did the first work which later brought him such renown; and Dr. R. S. Hill, Montgomery, spoke on the secret of Sims' success. The principal address of the evening was delivered by Dr. Edmond Souchon, New Orleans, who told of Sims' triumphal entrance into Paris where Souchon had the honor of acting as interpreter to the French audiences. A movement was started at this meeting, to erect a monument in Montgomery in memory of Sims.

ARIZONA

Hospital News.—The Arizona Sanatorium, Safford, was opened to receive patients, January 15.——The new hospital at Phoenix is rapidly nearing completion.

Personal.—Dr. George D. Troutman, Tucson, has been appointed physician of Pima County.——Dr. Winfred Wyley, Phoenix, has been appointed county physician of Gila County with headquarters at Globe.——Dr. Roderick D. Kennedy, Globe, received a fracture of the clavicle and bruises of the head and chest in an automobile accident.

Physical Examination before Marriage.—The Maricopa County Medical Society, at its January meeting, adopted resolutions recommending that persons applying for marriage licenses be examined by a board of competent physicians not engaged at the time in regular practice. The society endorses the proposal to secure legislation aimed to prohibit marriages of those of unsound mind, of those afflicted with any venereal diseases, of persons suffering from tuberculosis in advanced stages and of chronic alcoholics.

COLORADO

Luncheon to Wiley.—Dr. Harvey W. Wiley was the guest of the Medical Society of the City and County of Denver at a luncheon, January 29.

Banquet to New Staff.—The Sisters of St. Anthony's Hospital, Denver, gave a banquet to the newly chosen members of the hospital staff, January 23, which was attended by more than two hundred guests.

Gift to Library.—The Denver-Gross Association has made a gift of $4,100 to the medical library endowment fund of the Medical Society of the City and County of Denver, which increases this fund to $11,000.

Inhalatorium Provided for Sanatorium.—The Jewish Hospital for Consumptives, Denver, has been donated a large sum by Mrs. Joseph B. Greenhut, New York City, with which to equip an addition to the hospital for the inhalation treatment of tuberculosis.

Personal.—Dr. Mary Elizabeth Bates, Denver, has been elected vice-president and Dr. Agnes Ditson, Denver, secretary of the National Eugenics Society which was organized in Denver, January 25.——Dr. R. Albi has resigned as superintendent of the Steele Hospital, Denver, and has been succeeded by D Oscar Hayes.

DELAWARE

Hospital Fund Completed.—The twelve-day campaign to raise $300,000 by public subscription for an endowment fund for the Delaware Hospital, Wilmington, was brought to a successful termination forty minutes before the expiration of the allotted time.

Personal.—Dr. J. A. Ellegood, Wilmington, who has been ill for several months with septicemia, has recovered and resumed practice.——Dr. Robert W. Tomlinson, Wilmington, has been

appointed resident physician in the Presbyterian Hospital, New York City.

DISTRICT OF COLUMBIA

Fund to Fight Bubonic Plague.—Dr. William C. Woodward, health officer of Washington, appeared recently before the committee of appropriations of the House of Representatives, to urge an appropriation of $25,000 for the protection of Washington against a possible introduction of the bubonic plague.

New Officers.—Medico-Chirurgical Society of the District of Columbia, January 23: president, Dr. J. H. Johnson; secretary, Dr. W. H. Wilson.——Association for the Prevention of Tuberculosis of the District of Columbia: president, Gen. George M. Sternberg, U. S. Army, retired; secretary, Walter S. Ufford.

FLORIDA

State Association Meeting.—The Florida Medical Association will hold its annual meeting in Miami, May 13-15.

New Officers for Sanitarium.—Dr. P. C. Perry has been elected president, Dr. J. H. Douglas, vice-president and Dr. John E. Boyd, secretary of the De Soto Sanitarium, Jacksonville.

Physicians Lose License Fight.—The effort of the physicians of Pensacola to avoid payment of licenses has not succeeded, as the supreme court of the state, February 6, sustained the city of Pensacola and declared the license tax valid.

GEORGIA

Meeting of Alumni.—At the annual meeting of the Alumni Association of the Medical College of Georgia, Augusta, January 29, Dr. L. G. Hardman, Commerce, was elected president; Dr. Le Grand Guerry, Columbia, S. C., and Edmund W. Warren, Palatka, Fla., vice-presidents, and Dr. Charles W. Crane, Augusta, secretary.

Mears Entertained at Savannah.—Dr. James Ewing Mears, Philadelphia, was the guest of honor at an informal meeting of the library committee Book and Journal Club of the Georgia Medical Society. Dr. Mears was interested in the founding of the library and has repeatedly given substantial aid to the enterprize.

Personal.—Dr. R. C. Goolsby, Forsyth, sustained serious injury to his eye during an initiation at a lodge in Macon, February 3.——Dr. William P. Nicolson, Atlanta, who was seriously injured in an automobile accident, recently, sustaining a fracture of the clavicle and several ribs, is convalescent. ——Dr. W. H. Elliott, Savannah, chief surgeon of the Central Georgia Railroad has retired and has been succeeded by Dr. W. W. Owens.

ILLINOIS

Personal.—Dr. Sidney D. Wilgus, superintendent of the Kankakee State Hospital, has purchased the Ransom Sanatorium, Rockford, from the heirs of the late Dr. Frank Jencks. ——Dr. George F. Butler, Wilmette, has resigned as physician of Cook County to become medical director of the Mudlavia Sanitarium, Kramer, Ind. He has been succeeded as county physician by Dr. Haim I. Davis, Chicago.——Dr. Ralph Mills, Decatur, who is on leave from his station as medical missionary in Korea, was operated on recently for appendicitis in Rochester, Minn.——Dr. Jesse A. King, Victoria, fell against his buggy wheel recently, fracturing one rib.——Dr. George W. Fuller, Danville, has moved to Los Angeles, Cal.——Dr. E. E. G. Weiland, Bloomington, who has been ill with septicemia, is reported to be improving.

Chicago

New Dispensary.—A movement has been commenced for the organization of a free dispensary in the neighborhood of Wood and Division Streets. Dr. J. Shanks is at the head of the movement.

New Hospital Opened.—The new building of the German Hospital of Chicago was formally opened, February 16 The building has been completed at a cost of $350,000 and provides accommodation for 150 patients.

Tuberculosis Study.—The first meeting of the Tuberculosis Study Circle of the Chicago Tuberculosis Institute was held February 11. Dr. H. Gideon Wells of the University of Chicago spoke on the chemistherapy of tuberculosis.

Past Presidents' Dinner.—The Chicago Medical Society gave a banquet, February 12, in honor of its past presidents. Between seven and eight hundred were in attendance and twenty of the past presidents were on the platform. Dr. Jacob Frank, president, was toastmaster and the past presidents gave short talks regarding the progress of the society during their respective terms of office. A portrait of Dr. N. S. Davis, the first president, was unveiled by Dr. J. Rawson Pennington.

Personal.—Dr. W. E. J. Michelet was attacked by a thief and seriously injured, February 8.——Dr. Thomas A. Woodruff has gone to Jekyl Island for the remainder of the winter. ——Dr. H. H. Mather has been elected vice-president of the Alumni Association of Valparaiso University.

IOWA

State Society Meeting.—The annual meeting of the Iowa State Medical Society will be held in Des Moines, May 7-9.

College to Close.—Drake University College of Medicine will merge with the State University as detailed on page 619 of this issue.

Detention Hospital Opened.—The small-pox hospital, Des Moines, was opened, February 9, with one patient. The institution has room for fifty patients.

New Medical Societies.—Waterloo Medical Society was incorporated, February 7, with Dr. W. B. Small, president; Dr. W. M. Shirley, secretary, and Dr. J. Cecil Bickley, treasurer.——Fort Madison Clinical Society was organized recently with Dr. C. F. Wahrer, president and Dr. V. T. Doering, secretary.

Personal.—Dr. G. F. Severs, Centerville, has been appointed a member of the State Board of Health, vice Dr. B. L. Eiker, Leon.——Dr. L. B. Toon, Dow City, was thrown from his buggy in a runaway accident, January 28, and painfully injured.——Dr. W. W. Holmes, superintendent of the Denison Hospital, is reported to be critically ill.——Dr. Royal L. Cleaves, Cherokee, is said to be critically ill with pneumonia. ——Dr. and Mrs. O. A. Brownson, Dubuque, have moved to California.——Dr. Evalene E. Peo, Boone, has returned from Europe.——Dr. John Knox, Princeton, suffered dislocation of his right shoulder and fractured three ribs in a collision between his buggy and a train while driving across the railroad tracks at Princeton, February 11.——Dr. and Mrs. F. F. Feeney, New Hampton, sailed for Europe, February 18.——Dr. Mary D. Ardery is reported to be seriously ill at her home in Knoxville on account of a cerebral hemorrhage.

KENTUCKY

New Disease-Carrier.—After a number of examinations, the City Health Department has condemned the common fork in use at the saloon free-lunch stands throughout the city, and contemplates asking the general council to pass an ordinance prohibiting its use.

Personal.—Dr. T. W. Taylor, Henderson, suffered a cerebral hemorrhage on his ninetieth birthday, February 4.——Dr. Charles W. Aitkin, Flemingsburg, while leaving St. Joseph's Hospital, Lexington, with a patient, February 3, slipped on the ice and fell down five steps fracturing a rib.

Tuberculosis Hospital Nurses.—Nurses in training under the supervision of the Board of Tuberculosis Hospital must in future take a three-year course instead of a two-year course, before they are eligible for graduation; eight months of the training will be given in the City Hospital Training School for Nurses. This decision was reached recently at a conference between the Board of Public Safety and the Board of Tuberculosis Hospital.

Norton Infirmary Improvement.—The medical staff of the John N. Norton Memorial Infirmary in a recent conference with the board of trustees and the board of managers recommended a number of improvements that should bring this institution thoroughly up to date, including additional operating-rooms, a complete Roentgen-ray equipment, pathologic and chemical laboratories, an intern, additional equipment on each floor for surgical dressing, dressing and consultation room for the staff, etc.

City Hospital Staff.—The Board of Public Safety has been petitioned by the trustees of the Medical Department of the University of Louisville to place the appointment of the visiting staff in their hands so that the hospital may be used as a teaching hospital the year round. A number of the non-school practitioners have petitioned the board to appoint from the ranks of the non-school men a visiting staff for the months during which the school is not in session, which has been the custom heretofore. The negro physicians of Louisville have just presented a petition to the board, signed by twenty members of the Falls City Association of Physicians, Pharmacists and Dentists, colored, in which they request that the colored

patients of the institution be looked after by colored physicians, nurses and interns. The board promised to take the matter under consideration.

MARYLAND

Contagious Diseases.—The schools of North Govans have been closed on account of the prevalence of scarlet fever.——A case of small-pox was discovered at Cresaptown, February 13.

Baltimore

Convalescent Farm for Phipps Institute.—The Phipps Institute is to be equipped with a farm where patients under treatment at the psychiatric clinic may remain during convalescence.

Book and Journal Club.—The work of the Book and Journal Club is most valuable in adding new books and journals to the library of the Medical and Chirurgical Faculty of Maryland. There are at present eighty-seven members and about $500 is available from membership fees.

Personal.—Dr. Frank J. Sladen has been appointed head of the department of medicine and Dr. Harry W. Plaggemeyer, associate professor of surgery and director of the department of urologic surgery in the new Detroit General Hospital. Dr. Plaggemeyer will spend the spring and summer in research work in Europe.——Dr. Nathan R. Gorter, the new health commissioner, fell and broke his right arm and wrist at the Church Home and Infirmary, recently.——Dr. Andrew A. Anderson has resigned from the staff of Mercy Hospital and gone to Salt Lake City to practice.——Dr. J. B. Schwatka has returned from Europe.——Dr. Kenneth Jones, assistant in the insane department of Bayview Asylum, has resigned.

NEW YORK

Home for Families of Tuberculosis Patients.—The Urania Society of Otisville has petitioned the State Board of Charities for permission to establish a home in which to care for the wives and children of tuberculosis patients in the Municipal Sanatorium, Otisville.

Personal.—Drs. H. S. Liddle, Frank Vander Bogart, Louis P. Faust, George P. Harran and E. M. Stanton have been elected directors of the Mercy Hospital, Schenectady.——Dr. and Mrs. Frederick Flaherty, Syracuse, have returned from a trip to the West Indies and Panama.——Dr. James H. Glass has been reelected surgeon in charge of Faxton Hospital, Utica.

Open-Air System in Public Schools.—An experiment in ventilation recently worked out by Dr. John B. Todd, Syracuse, has proved very satisfactory. With the temperature at 1 degree below zero, four of the largest rooms in the Sumner School were kept wide open, the windows being protected only by screens covered with unbleached cotton cloth. This open-air system is to be introduced in other schools in the city.

Hospital Notes.—The annex to St. Mary's Hospital, Amsterdam, which cost about $30,000, was formally opened, February 2. The three-story brick annex is directly connected with the old part.——The Mountain Sanatorium, Binghamton, has been turned over by the City Hospital to the health commissioner of the city.——The State Hospital Commission emphasizes the crowded condition of the hospitals for the insane in its annual report, giving a total shortage at the close of 1912 of 4,800 beds. The total number of insane in the state as given is as follows: men, 16,271; women, 17,702.

The Antivivisection Bill.—The McClelland Antivivisection Bill is responsible for an inquiry on the part of one of the state senators as to the reasons why all the best physicians are opposed to the bill. Dr. Simon Flexner in response to the inquiry, especially emphasizes the fact that the secret private laboratory which no one but an officer with a warrant can get into is a figment of the imagination; that there is no information for a commission of investigation to obtain beyond what is obtainable by any responsible individual any day in the year, as no one capable of understanding what is going on is refused admission to the laboratories. The present measure before the legislature carries no appropriation for expenses. It is presumed that the antivivisection societies proposed to pay for the work and would determine beforehand its scope and effect.

Sulzer Commission Continues Its Hearings.—The commission appointed by Governor Sulzer to investigate and make suggestions for the revision of the health laws of the state continues to take testimony. Dr. Porter has given his opinions on a system of sanitary inspection, which, he says, must be inaugurated slowly as the up-state voters will not submuit to heavier taxation. He suggests that one supervisor of sanitation have charge of three counties, be allowed a salary of $3,000 a year, and be assured of ten years' tenure of office and in this connection he recommends a state sanitary school. Dr. Walter F. Wilcox pointed out the defects in the present system of collecting vital statistics, and Mr. Jacob H. Schiff made a plea for the state control of advanced cases of tuberculosis. He said that under the present laws it was easy to get tuberculous persons admitted to institutions, but it was not easy to keep them there. Many are now allowed to leave sanatoriums with the disease arrested, with the appalling result that 95 per cent. of them suffer relapses. There should be compulsory isolation for advanced cases, an opportunity for tuberculous patients to go to sanatoriums and on leaving them, to be permitted to go where they will not be victims of their old surroundings.

New York City

Death of Well-Known Medical College Employee.—Joseph V. Standish, for fifty years clerk of the University and Bellevue Hospital Medical College, known to many generations of medical students, died at his home in New York, February 10, from angina pectoris.

Personal.—Dr. M. Allen Starr sailed for Egypt, February 18, to be gone until September.——Dr. Alexis Carrel has been elected corresponding member of the Paris Academy of Medicine and has had conferred on him the decoration of the Legion of Honor.——Dr. Emma C. Hackett has sailed for Europe.

Cartwright Lectures.—Prof. Ludwig Aschoff's lectures, the Cartwright lectures of the Alumni Association of the College of Physicians and Surgeons, will be given at the New York Academy of Medicine, March 12-15. The subject of the first lecture is, "Thrombosis," and of the second, "Contracted Kidney."

First Aid Society Meets.—The Society for Instruction in First Aid to the Injured held its annual meeting February 11. Dr. Theron W. Kilmer was reelected medical director. The organization now has 27 classes in the churches, boy-scout clubs, and schools, and the work among the United States Volunteer Life Saving Corps is progressing.

Death Report Rules Changed.—The Health Department has adopted new rules for the reporting of deaths. Any cause of death which may be the result of an injury and consequently be the subject for investigation by the coroner, must have that fact stated in the death certificate. No certificate will be accepted which gives a mere symptom as the sole cause of death, such as asphyxia, debility, heart failure, etc., unless accompanied by a satisfactory written explanation. The Board of Health has also adopted a regulation forbidding earth burial in Manhattan south of 130th Street.

City Preparing to Clean House.—Health Commissioner Lederle has written to the mayor suggesting a thorough spring house cleaning for the city which shall include the following: Removal of all rubbish and dirt from the city, including thorough cleaning of cellars, roofs, yards and vacant lots; thorough cleaning of all streets; cleaning out catch basins; freeing the city as far as possible from smoke and cinder nuisances, from odors of offensive trades and the dust of streets; the better protection of food from the contamination of dust and flies; fighting the fly not by "swatting" but by prevention of breeding, and fighting the mosquito nuisance by eliminating the breeding places. The mayor has approved.

NORTH CAROLINA

New Hospital.—The Chamber of Commerce of Burlington has planned to erect a hospital at a cost of $30,000, and expects to have it ready to receive patients within a year.

New Officers.—Caldwell County Medical Society at the Foothills Sanatorium, Lenoir, January 22: president, Dr. A. B. Goodman; secretary-treasurer, Dr. C. B. McNairy, both of Lenoir (reelected).

Social Service Congress Organized.—The Social Service Congress of North Carolina held its first annual meeting in Raleigh, February 11-12. The opening address was delivered by Senator Robert L. Owens of Oklahoma.

Personal.—Dr. P. B. Orr has been elected visiting surgeon to the Mission Hospital, Asheville, vice Dr. William D. Hillard, removed to Washington, D. C.——Dr. Lewis W. Elias has been elected a member of the emergency staff of the hospital.——Dr. Otho B. Ross, Charlotte, is under treatment in an eye and ear hospital in New York City.

PENNSYLVANIA

Hospital News.—The new wing of the Spangler Hospital recently erected at a cost of $6,000 was opened, February 12.——In the budget of appropriations for hospitals, an item of

$18,000 appears for the Robert Packer Hospital, Sayre.——The McKeesport Hospital has asked a state appropriation of $105,000 for the coming biennium, $75,000 for maintenance, the remainder for completion and equipment of the nurses' home.

State Health Department Cuts Death-Rate.—In the early part of this month, Dr. Samuel G. Dixon, State Health Commissioner, made the statement that Pennsylvania, one of the most disease-ridden states in the union, because of its poor water, has in the past year reduced deaths from typhoid 62 per cent., from 4,000 to 1,200; and has reduced diphtheria deaths from 42 per cent. to 8 per cent., which insurance men have estimated saved them $10,000,000. Men are placed on all the watersheds of the state, removing pollution and all water companies are required to install filters before they can secure a permit to operate from the state board. All municipalities are compelled to keep their sewage clean and to obtain permits for all extensions. In discussing the care of tuberculous patients, Dr. Dixon spoke of Mount Alto Sanatorium on South Mountain, where there are 55,000 acres of land and where 1,067 patients are living in pure pine forests. The aim of the department is to cure all consumptives, who can be cured, and to segregate incurables.

Personal.—Dr. Edward B. Shellenberger, for ten years a member of the staff of the State Hospital for the Insane, Warren, has resigned and will practice in Philadelphia.——Dr. B. F. Shires, Patton, is a patient in the Medico-Chirurgical Hospital, Philadelphia.——Dr. Joel D. Brown, Oakes, resident physician at the Montgomery County Home, has been placed in charge of the institution at Black Rock.——Dr. Elizabeth C. Spencer, resident physician in the Women's Department of the State Hospital, Norristown, has resigned to take effect March 1.——Dr. Gustave A. Zimmerman, Johnstown, is said to be seriously ill in Chicago as the result of a pulmonary hemorrhage.——Dr. Louis S. Dunn, Chester, slipped and fell recently, injuring his right leg.——Dr. John A. Hawkins, Pittsburgh, was operated on for cataract, recently, and is reported to be improving.——Dr R. F. Ridgway has resigned from the staff of the Harrisburg City Hospital to accept the position of first assistant physician at the Pennsylvania State Hospital, succeeding Dr. Robert A. Stewart, who has accepted a similar position in the Iowa State Hospital, Mount Pleasant.

Philadelphia

Raises Medical Standard.—The executive committee of the council of the Medical School of the University of Pennsylvania has adopted resolutions that hereafter any student who repeats a year because of failure is ineligible to repeat another year later in the course. Hitherto the time for completing the course has been unlimited.

SOUTH CAROLINA

Medical College Made a State Institution.—A bill passed the South Carolina legislature February 7, transferring the property of the Medical College of the State of South Carolina, Charleston, to the state in trust, to control and operate. The control of the college is turned over to a board consisting of the governor, the superintendent of education, chairmen of two committees and eight members to be elected by the legislature. For the reorganization and for carrying on the work for the current year, $20,000 is appropriated. The medical college is to be strictly an independent state educational institution.

TEXAS

Change of Date of State Meeting.—The date of meeting of the State Medical Association of Texas at San Antonio has been changed from May 13-15 to May 6-8.

Personal.—Dr. Hugh L. McLaurin, Dallas, was reappointed a member of the State Board of Health, February 11.——Dr. William R. Newton, Buckholtz, has purchased Reese Park, Cameron, for $6,000 and will erect there a modern sanatorium to cost $40,000, one-half of the expense of which is to be borne by the city.

WISCONSIN

First County Sanatorium Opened.—The Manitowoc County Tuberculosis Sanatorium, erected at a cost of $15,000, was opened February 1. The building is a two-story "L"-shaped structure and can accommodate at present twelve patients.

Personal.—Dr. G. M. Smith, Mondovi, was operated on for appendicitis recently in the Sacred Heart Hospital, Eau Claire, and is making satisfactory progress toward recovery.——Dr. G. I. Hogue, Milwaukee, has been reelected treasurer of the Wisconsin State Association for the Blind.

Medical Office Building.—A site has been selected for a physicians' building for Milwaukee at the southeast corner of Wisconsin and Jackson streets. The building will probably be eight stories in height, of steel construction and the upper floors will be devoted exclusively to offices of physicians and dentists.

GENERAL AND FOREIGN

Conference on Life Insurance.—The third mid-year meeting of the Medical Section of the American Life Convention will be held at the Hotel Eastman, Hot Springs, Ark, February 26-28.

Missing Physician.—The *Canal Record* asks that anyone having information regarding the whereabouts of Dr. Moses Harold Lindenbaum, formerly of New York City, who is believed to be practicing medicine on the Isthmus, communicate with the American legation at Panama.

Child Labor Conference.—The ninth annual conference of the National Child Labor Committee will be held in Jacksonville, Fla., March 13-16. The general subject of child labor and poverty will be discussed in relation to wages, health, unemployment and the family. A feature will be the collection of pictures and charts regarding child labor, including the exhibit on "home work in the New York tenements."

Missouri Valley Physicians to Meet.—The twenty-fifth semiannual meeting of the Medical Society of the Missouri Valley will be held in Kansas City, Mo., March 20-21. The meetings will held at the Coates House, and symposiums have been arranged on cancer, rheumatism, the colon and genital tuberculosis in the female. March 22 a series of clinics is to be held at the various hospitals of the city.

International Congress on Ophthalmology.—The Twelfth International Congress on Ophthalmology will convene Aug. 11-15, 1914, at St. Petersburg, with Professor Angelucci of Naples in the chair. The president of the international executive committee is Prof. L. G. Bellarminof, Mochowaja 38, St. Petersburg, and on the committee from the United States are Drs. E. E. Blaauw of Buffalo, G. E. de Schweinitz of Philadelphia, A. Barkan of San Francisco and W. H. Luedde of St. Louis.

Health Work Expense.—In a statement forwarded to the Senate by the Secretary of the Treasury, February 12, in compliance with the terms of a resolution endorsed by Senator Works, it is stated that the annual cost of the health division of the War Department is $5,714,090; that of the Navy, $3,730,522; that of the Agricultural Department, $3,899,202, and the health service of Panama Canal, $1,620,891. There are together 15,632 persons in the employ of the various health services.

New Review on Industrial Hygiene.—A new monthly has appeared devoted to reviews of articles bearing on industrial hygiene, means of prevention and treatment of industrial accidents and occupational affections. It is backed by the institute for industrial hygiene at Frankfort-on-the-Main, and the editor-in-chief is Dr. F. Curschmann, Greppin-Werke, Kr. Bitterfeld. Its official title is the *Zentralblatt für Gewerbehygiene*. The opening number contains an article on the importance of industrial hygiene for the physician and the worker, as the borderland between medicine and technology; another on the dangers inherent in making rubberized goods, and one on post-traumatic mental and nervous affections.

Bequests and Donations.—The following bequests and donations have recently been announced:

Massachusetts General Hospital, Boston, $60,000 for free treatment of the insane at the McLean Asylum, Waverly, Mass., under the will of Sarah E. Cazenove.

Home Hospital, Lafayette, Ind., about $50,000 by the will of John Kyle.

Jefferson Hospital, $15,000 for the establishment of three beds, one in the surgical ward in memory of Phineas J. Horwitz, late medical director and surgeon general U. S. Navy, a second in the gynecologic ward in memory of Caroline Norris Horwitz and a third in the genito-urinary ward in memory of Orville Horwitz, by the will of Dr. Orville Horwitz.

Philadelphia Home for Incurables and the Home for Consumptives, Chestnut Hill, are made residuary beneficiaries of the estate of Mary M. R. Rand, valued at $21,000.

Troy (N. Y.) Hospital Association, $25,000 for the erection of a new building by the will of Peter McCarty.

Evanston (Ill.) Hospital, the income on $5,000 for maintenance of a free bed by the will of George M. Sargent.

New England Baptist Hospital, $250,000 for a building to be known as the Samuel Newell Brown Memorial Hospital; Brockton Hospital, $50,000 to be called the Franklin and Martha K. Ames Fund in memory of the testator's father and mother, $10,000 to the same institution in memory of the testator's niece, Charlotte Ames Gruver, to be used for the childrens' ward; $5,000 for the Home for Incurable Children, Boston, and $10,000 to the Cullis Consumptives' Home by the will of Mrs. Charlotte Thompson Ames Brown, Boston.

South Baltimore Eye, Ear, Nose and Throat Charity Hospital, $10,000 from Mr. William Grecht.

Philadelphia Polyclinic Hospital, $8,000 annually for research work in diseases of the skin, by an anonymous donor.

Methodist Hospital, Philadelphia, a contingent bequest of $5,000 under the will of Rev. John W. Sayres.

Jewish Maternity Hospital, Philadelphia, a contingent bequest of $10,000 by the late Julia Moss.

Jewish Hospital, Philadelphia, $50,000 for a surgical ward by the will of Samuel Kohn.

Presbyterian, St. Vincent's and Mt. Sinai Hospitals, New York City, each $25,000 by the late John J. Clancy.

New York Academy of Medicine, $10,000, anonymous.

Tuberculosis Preventorium for Children, $10,000 for the construction of a new school building, anonymous.

National Jewish Hospital for Consumptives, Denver, $50,000 for an infirmary building, from Samuel Grabfelder, Philadelphia, president.

For antituberculosis work in Georgia, $50,000 by the will of Capt. William Green Raoul.

New York Nursery and Childs Hospital about $16,000 by the annual charity ball.

New York Policlinic Hospital, $5,000 from Mrs. Russell Sage.

Mt. Sinai Hospital and German Hospital and Dispensary, New York City, each $40,550 for maintaining free wards, and Columbia University, $40,550 as the Openhym Research Fund, the income to be used for research into the cause, prevention and cure of cancer, by the will of Augustus W. Openhym.

CANADA

Fire in Hospital.—A fire in a hospital at Big River, Sask., February 4, caused a loss estimated at $20,000. The thirty patients were removed without casualty.

Personal.—Dr. C. N. E. Brown, Toronto, has been appointed superintendent of the new Detroit General Hospital.——Dr. Fred L. Burdon has been elected chairman of the London, Ont., board of health.

Improvements at Selkirk Asylum.—Changes and improvements are being made in Selkirk (Man.) Asylum along the lines indicated in the recent report of the grand jury. The scheme of improvements include the building of a convalscent home.

Small-Pox in Hamilton.—There are said to be 100 cases of small-pox in Hamilton and the situation is believed not to be improved by the friction said to exist between the medical health officer, who has practically ordered compulsory vaccination, and other members of the profession of the city.

Hospital News.—The contract for the tuberculosis hospital to be built at Union, Ont., by the Daughters of the Empire of Windsor, has been awarded. A site of 16 acres with a lake frontage of1,200 feet has been purchased and buildings are to be erected to cost about $25,000.——A new home for the Montreal Foundling and Sick Babies' Hospital is to be erected this year on St. Urbain Street at a cost of $60,000. Over $50,000 has been collected toward the building fund and the site has been secured at a cost of $40,000.——A new hospital is to be established by the sisters of the St. Eugene Hospital at Sturgeon Lake, B. C.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 8, 1913.

The National Insurance Act

In the House of Commons the chancellor of the exchequer, Mr. Lloyd George, in reply to criticisms, made an animated speech in which he asserted that the opposition to the insurance act was political rather than medical and was almost entirely confined to London. In spite of the agitation against it the act was working well. There were now 14,000,000 insured persons paying contributions regularly. Already 5,000 were receiving sanatorium treatment for consumption. The panel physicians numbered 13,000, or one physician for every 1,100 insured. One thing the act had brought to light was that the poorer districts were largely understaffed with physicians. A result of the act was that physicians were beginning to drift into those districts, and in future they would be as well paid there as in the well-to-do districts. With regard to the quality of the physicians working the act, in all the great industrial cities the vast majority of the physicians engaged in industrial practice were now on the list, and up to the present the number of complaints had been infinitesimal. Comparing this country with Germany, the chancellor said that here the benefits of the insurance had begun six months after the commencement of the levying of contributions, whereas in Germany two years were allowed to run.

THE BRITISH MEDICAL ASSOCIATION AND THE ACT: FINANCIAL DEFICIT

In obtaining modifications of the insurance act and in resisting it the British Medical Association has incurred considerable expense which seriously deranges its finance. In 1910, the year in which it was first affected by the act, it spent $25,000 more than in 1909. In 1911 it spent $50,000 more than in 1910, and in 1912 it spent $56,500 more than in 1911. Since the introduction of the act an additional expenditure of $180,000 has taken place. Of this sum from $25,000 to $30,000 was incurred in connection with litigation (described in previous letters to THE JOURNAL) which had nothing to do with the act. For the campaign against the act the association had to find $150,000 toward which it received about $67,500 from the guarantee fund. On the other hand, as the result of increased membership the revenue of the association has been increased by $10,000 per annum. The net result was that the revenue for 1912 is insufficient by $80,000 to meet the current expenses for the year. Much of the increased expenditure was due to the payment of railway fares for the members of the council and the representatives to the meetings which were constantly taking place in connection with the act. The fares for a representative meeting cost about $2,500. It was pointed out that if the association was to continue to concern itself with political questions it must raise sufficient funds to do so adequately.

GREATER FACILITIES FOR OBTAINING THE OPINION OF THE ASSOCIATION: A POSTAL VOTE

The unfortunate position in which the British Medical Association placed itself in its attempt to defeat the insurance act is now apparent to both friend and foe. Relying on the 27,000 pledges, the representative body decided by a large majority that the profession should not work the act. This was only an endorsement of the poll taken at the divisional meetings, in which 9,331 members and 1,888 non-members voted in favor of refusing to work the act, while 1,963 members and 445 non-members voted against this decision. It was pointed out in my previous letters that this poll did not include half of the whole profession, which numbers 31,000. A controversy arose as to whether the voting represented the opinion of the majority of the profession. Some maintained that the large abstention showed that it did not, while others pointed out that the exigencies of practice and other causes prevented a fuller attendance, and that therefore the poll was representative. When a few days after the refusal of the association to work the act the government was able to announce that nearly half of the profession had gone on the panels, it became evident that a large proportion of the absentees must have been against the refusal to work the act. The mortifying sequel then followed in which the association formally released the profession from a pledge which half of them had already ignored. The reasons for justifying the ignoring of the pledge have been given in previous letters to THE JOURNAL. The insurance committee of the association has asked the council to consider in what way it may be possible to obtain the views of the profession more quickly and accurately than by the divisional meetings which are attended usually by a minority of the members. A postal vote has been suggested. Discussing the question in the *British Medical Journal*, the president of the association, Dr. Henry Davy, admits that there is a strong consensus of opinion that recent events have shown that the representative meeting may completely fail to represent the majority of the profession. That this might happen under a constitution under which a large proportion of the busiest practitioners throughout the country have to travel distances from six to forty miles in order to have a voice has already been foreseen. The president thinks that the association can never be successful in formulating a policy for the profession until every physician, no matter how busy, has an opportunity of recording his opinion as to what the policy of the association should be before it is declared. A postal referendum is one way of solving the difficulty, but the president does not think that it can be solved by this alone. The question is, How can the busy physician living from six to forty miles from his divisional center have a voice in the policy of the association before it is declared? If he is deprived of his opportunity of giving his voice he will not feel bound to carry out the policy. The president suggests the following changes in the constitution of the British Medical Association: 1. Every division should choose its representative by a postal vote. 2. A representative should speak and vote at a representative meeting in accordance with the wishes of his constituents, but a plan should be devised to replace the present haphazard system under which a representative may receive instructions from a meeting attended by perhaps less than 10 per cent. of the members of a division. He suggests that a division meeting should not be competent to "instruct" its representatives unless at least two-thirds of the members are present. A decision of the

association is a very serious act, and the council in preparing the agenda which it issues for the information of members should state in plain and unmistakable language the matters on which formal decisions fixing the policy of the association are to be invited. If a sufficient number of members of a division cannot attend the meeting of the division, then the representative of the division who has been elected by the postal vote, which gives every member a choice in his selection, should be free to speak and vote in accordance with his judgment after hearing the arguments in the representative meeting. 3. The council should have the power of taking a postal referendum on the principle embodied in the Swiss constitution on all matters which they cannot settle by a two-thirds majority.

The Compulsory Notification of Tuberculosis

A new order for the notification of tuberculosis has been issued by the Local Government Board. Previously notification was confined to pulmonary tuberculosis. Now it is extended to all forms of the disease. Every physician will henceforth be required to make a "primary" notification of tuberculosis to the health officer of the district, for which a fee of 50 cents will be paid. Medical officers of institutions, such as hospitals, asylums, poor-law institutions, and sanatoriums are under the same obligation as private practitioners. In addition they are required to make "secondary" notifications for all admissions and discharges of patients suffering from tuberculosis. Under the present system the officers of institutions merely notify the local authority. Health officers are required to take such steps as are necessary for investigating the source of infection, preventing the spread of infection, and removing conditions favorable to infection. Nothing in the regulations authorizes any action which renders the person notified liable to penalty or subjects him to any restrictions, prohibition or disability affecting himself or his employment on the grounds of his suffering from tuberculosis. As more than half of the deaths from non-pulmonary tuberculosis occur in children under the age of 5 years, and it is probable that a much higher percentage of the total number of persons suffering from non-pulmonary tuberculosis are children of this age, the government hopes that notification of these cases will facilitate investigation of sources of infection and assist in securing improvement in the conditions under which children live. The effect of the new regulations combined with the vast provision for the sanatorium and other treatment of tuberculosis mark an important advance in the campaign against tuberculosis.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 31, 1913.

The Connection of Bernheim and Dieupart with Dioradin

In an interesting recent lawsuit, light was thrown on the methods of the promoters of Dioradin. (This product was discussed in THE JOURNAL, Aug. 24, 1912, p. 669, and Oct. 26, 1912, p. 1556.) For four years Dr. Louis Dieupart was head physician of the dispensary for the tuberculous established at Saint-Denis by the Oeuvre de la tuberculose humaine, at the head of which is Dr. Samuel Bernheim. A falling out between the two physicians ended in the dismissal of Dr. Dieupart, owing to Dr. Bernheim's instruction to his colleague to use Dioradin. Dr. Dieupart protested, on the ground of the inefficacy of Dioradin. At the trial he testified that Dr. Bernheim received a commission on all Dioradin used at the Saint-Denis dispensary. He sued for 5,000 francs ($1,000) as damages for abrupt dismissal. He lost the case, as the court held that a distinction must be made between a municipal hospital and a dispensary founded and maintained by private charity. In the hospital the physician, chosen at a meeting, enjoys full liberty in treatment and the choice of drugs, while in a private clinic or in a dispensary, as that at Saint-Denis, he is under the direction of the president of the charitable society and must follow his instructions. Be this as it may, those who brought this suit are not at all in favor of Dioradin and its promoters.

Knighthood in the Legion of Honor Conferred on Madame Déjerine-Klumpke

Among the appointments made to the Legion of Honor, that of Mme. Déjerine-Klumpke deserves special notice. Mme. Déjerine, born Klumpke, was the first woman to receive an appointment as intern in the hospitals at Paris; she received this at the meeting in 1886. She married Dr. Déjerine, now clinical professor of diseases of the nervous system at the Faculté de médecine de Paris, and in collaboration with him published the "Anatomy of the Nervous Centers." She had already won distinction by her researches on the radicular paralyses of the brachial plexus and on polyneuritis. One of the types of radicular paralysis has been named after Mme. Déjerine-Klumpke.

Cause of the Death of Jean Jacques Rousseau

The recent celebration of the bicentenary of Jean Jacques Rousseau called attention anew to the cause of the death of the celebrated philosopher. Every conceivable hypothesis has been entertained on this subject. It was at first thought that he died a natural death of serous apoplexy; ten years later he was considered a suicide; then he was held to have been murdered. The last-named opinion was lately advanced by Dr. Julien Raspail, who owns the death mask executed by the famous sculptor Houdon. Now Dr. A. Lacassagne, professor of legal medicine at the Faculté de medecine de Lyon, has published an article in which he presents convincing proofs of the natural death of Rousseau, based on information which is possessed concerning the nature of the last illness of the philosopher, and also on a careful study of the death mask which he was able to examine with Dr. Raspail. Lacassagne is of the opinion that Rousseau did not commit suicide and that he was not the victim of an assassin: he died of uremia. The attack of uremia was terminated by an accidental fall, which caused a wound in the head. This wound in itself was not serious enough to cause death as it was superficial and made no depression in the skull. In fact, the report of the exhuming of the remains of Rousseau, made at the Pantheon, Dec. 18, 1897, stated that "the skull was intact, with no trace of perforation or fracture." Conclusively, Rousseau died a natural death attended with an accident. The suddenness of his death was not due to the accident.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 1, 1913.

Foreigners as a Problem of German Universities

The strike of medical students at Halle, which I have mentioned several times in my letters, has stirred up the question of foreign students in other universities also, in which similar measures as in Halle have been adopted. This circumstance has also caused the organization for the first time of the clinical students in Berlin. In a meeting which was attended by about eight hundred students, the insufficient accommodation in the local clinics and the difficulties resulting from this lack of space for the German students were discussed. The number of foreign medical students in the last semester is reported as about six hundred, including about four hundred Russians. It is not the intention to limit German hospitality toward foreigners, but to prevent German students from being put to any serious disadvantage on their account.

The fact that the measures adopted by foreign universities, especially the Russian, against the admission of German students are considerably more severe than those employed by us, is also of great weight. The demands presented by a student of Halle, as a representative of the society of German clinical students (Deutscher Klinikerverband), are as follows: 1. The foreigners must bring with them a government certificate corresponding to our certificate admitting one to the university. 2. At matriculation they must present a passport issued by the authorities of their respective countries. 3. The permission for practice as well as for the admission to doctors' examination shall be conditioned on the presentation of a German certificate as to an examination in the German language. 4. Only those foreigners who have passed a preliminary physicians' examination or an equivalent of such will be allowed to practice. 5. The number of foreigners must be proportionally limited (this should not be interpreted as an arbitrary, limited number, but as a limitation according to the circumstances of the individual university). 6. The foreigners are to pay double fees. 7. The foreigners are not to be granted a respite in paying their registration fees. 8. They must record their names in a special list, so that the authorities may be able to investigate whether or not they possess the right to practice. 9. Foreigners may be considered for the positions of assistants only after the native students have been given consideration. There is the further requirement that the first four rows of seats in the lecture-rooms be reserved for the native students. The foreigners may not select their places until two weeks after the commencement of lectures. These resolutions have been adopted and will be passed on (no certain date for this has yet been set) to all the other faculties.

Mortality in Prussia

As compared with 1910, the year 1911 shows a marked increase of mortality in Prussia. On July 1 there were on the average among each thousand inhabitants 17.2 deaths (excepting the still-born) against 16 in 1910, which indicates an increase of nearly 7 per cent. The mortality of infants has increased as compared with the previous year by about 16 or 17 per cent., a fact which is especially worthy of notice if the already high infant mortality—of over three hundred among each thousand infants—is considered. The death-rate among persons over 80 years of age shows a similar increase. In all other age periods a slight increase has also been noticed. The number of deaths varies considerably in different districts; on the whole, the mortality is higher in the east than in the west. This increase of mortality is especially alarming in connection with the surprisingly rapid decrease of births.

Physiology in Medical Examinations

According to the old order of examinations, physiology was considered one of the most important subjects in the preliminary examinations; present examination in physiology has been completely omitted, and instead of it more practical subjects have been added. As the German physiologic association has stated in a petition directed to the department of education, the standard of physiologic training of physicians has been essentially lowered by this change, which was clearly shown by the sad experience in examinations in physiology for the medical degree. There are two causes for this. In the first place, it is a fact repeatedly stated by older physicians that the meaning of many physiologic phenomena for medical practice is not understood by physicians to the full extent until they possess the knowledge which they have gathered in pathology and the clinics. On the other hand, by limiting the examination in physiology to the preliminary test, the impression is created beforehand among students that when this examination is once passed, the training in physiology is accomplished and that it is best to forget all physiologic matters as quickly as possible so that the brain may be free for pathology and clinical practice.

If no further examination in physiology is required in the state examinations, the need of considering physiologic facts during and after the acquisition of pathologic and clinical experience is eliminated. In this way, however, the standard of scientific education of physicians is sinking, as physiology is one of the central sciences in all branches of medicine. For this reason the petition pleads that in summing up the results of medical and dental examinations, physiology should have the same value as anatomy. In reestablishing physiology among the subjects of the state examination, the error of the older order may be corrected, which was caused by giving the preference to anatomy and physiology above all others. In the old days the candidate had to pass the examination in anatomy and physiology first. Only after these were successfully passed, was he allowed to report for the rest of the examinations. As a result of this, the candidates for examination prepared themselves first exclusively for anatomy and physiology, anatomy taking up most of the time on account of its enormous material necessary to be memorized. This error can easily be avoided in reestablishing physiology in state examinations.

Cases of Appendicitis in Prussia in 1911

Appendicitis was the cause of a marked increase of deaths in Prussia in 1911. There died of this disease 2,547 persons, as compared with 2,220 in 1910 and 2,128 in 1909. The increase amounted to 327, or 14.7 per cent., while in 1910 an increase of only 92, or 4.3 per cent. was noted. The age between 5 to 25 years is represented with special frequency among the mortality statistics. With the increasing years the number of deaths caused by appendicitis is smaller. While among all the deceased in 1911, only 1.46 per cent. were between the ages of 10 and 15 years, among those who died of appendicitis 10.72 per cent. were of these ages. The same is true of those who died between 15 and 20 years of age. The percentage of all deaths in this age is 2.37, while deaths caused by appendicitis amount to 10.29 per cent. On the other hand, in the period between 60 and 70 years the percentage of all deaths is 11.30, and 6.16 per cent. of the deaths are caused by appendicitis; in the period from 70 to 80 years the percentages are 12.21 and 4.20, respectively.

Manufacturers Attempt to Lower the Standing of Physicians

When the German physicians founded their Leipsic League and pointed out the difficulties which were arising from the state sickness insurance, the Krankenkassen asserted that these conditions were solely due to the great number of physicians. However, as the majority of physicians became members of the Leipsic League, it consequently grew to be difficult for the Krankenkassen which were in conflict with physicians to find doctors willing to work, in spite of their large number. The wholesale manufacturers who had established branches of the industrial sickness insurance tried by means of newspaper notices to direct the attention of as many young people as possible to studying medicine. Experience had taught them that the greater the number of unemployed, the easier the problem for the employer. The physicians, however, considering that their profession is actually overcrowded in Germany, published explanatory articles particularly directed to the gymnasium graduates in order to dissuade them from studying medicine. The association for the maintenance of interests of the German industrial sickness insurance, the Verband zur Wahrung der Interessen der deutschen Betriebskrankenkassen, is trying to frustrate these efforts of physicians. The association held it necessary to address a petition to the department of education, in which it is pointed out how few physicians there are at present and that this deficiency will be still worse in the future. A request is made in this petition that attempts to dissuade students from the study of medicine be forbidden in the institutions of learning, and also that the names of the next gymnasium-graduates be not published. It is hardly to be expected that the department of education will comply with this request.

Organization of the Dentists

Like physicians and members of other professions, the dentists have thought it advantageous to institute a professional organization which is recognized by the state. By an imperial decree, a Prussian dental chamber was established the latter part of December, to be located in Berlin. The business of the dental chamber will be to attend to all affairs and questions which arise in connection with the dental profession, especially the education of dentists, the interests of the dental profession and dental hygiene. The chamber will be authorized to make suggestions and propositions within its field of activity to the state authorities; the state authorities shall give it opportunity for expressing opinions on questions referring to dentistry. The members of the dental chamber will be elected separately by provinces. The provincial police district of Berlin represents its own voting district. Each voting district elects two members. If the number of voters reaches 200, then three members may be elected, and for each further 200 one more member. The president who represents the chamber publicly is elected by the members of the chamber.

Establishment of a Municipal Housing Bureau in Berlin

In order to alleviate and gradually eliminate the bad conditions which are found in the dwellings of Berlin, the city council has decided to establish a new organization for the supervision and inspection of buildings, which will begin its activity during this year. At the head of this new organization is put a committee on housing conditions. The foremost task of this committee will be to investigate and explain the existing conditions of the housing system in Berlin, so that improvements can be made where necessary. Another very important practical task incumbent on the committee is to learn how the oversight and inspection of housing conditions are already carried on in a number of other cities, for instance Frankfort-on-the-Main. Efforts are to be made in the interest of tenants and landlords that conditions in the dwellings be brought to a certain standard and thus maintained, so that evils may be eliminated. Although it is not the function of a municipal housing bureau to extend financial help to those affected, the city council thought it advisable to help temporarily, to a certain extent, where bad conditions are found which are not caused intentionally and where a reference to charity is out of place. There is no appropriation made for this purpose from the public funds; however, employment of endowments appears advantageous and unobjectionable. Cooperation of citizens is contemplated through the organization of special housing commissions, corresponding to the medical districts. It is intended to bring the committee into existence on April 1, while the housing bureau will not begin its activity until October 1, after all necessary preliminary work is finished. The cost of the complete project, not including rent and other similar expenses, will amount to about $25,000 (100,000 marks). For the year 1913 an appropriation of $22,500 (90,000 marks) will be included in the budget. A motion to this effect will be made at the next city council meeting.

Miscellany

Hypnotics, Analgesics and Antipyretics

The propaganda against the abuse of habit-forming remedies, especially those recommended for the relief of pain, has tended to create a desirable caution in the mind of both physician and patient. At the same time there is presented the serious problem to determine which will be likely to do the greater harm, the temporary administration of an analgesic or the continuance of the pain. There is a point at which the physician must decide which is the lesser of two evils, continued nervous irritation or functional damage from the action of the medicine. Insomnia should be removed if possible by hygiene, but if this fails, hypnotics may often be employed with advantage. By many it is regarded as preferable to lower an excessive temperature by antipyretics, if other means fail, rather than to permit the patient to become exhausted by the fever and its consequences. On the other hand, the remote consequences of an antipyretic should always be borne in mind. According to Manquat's "Principles of Therapeutics" (p. 102), antipyrin even in benign affections sometimes prolongs the disease. This author gives the following excellent advice:

"The physician must therefore observe the delicate features of symptomatic therapeutics if he wishes at once to safeguard the interests of the patient and his own authority. A conscientious and learned physician, who sees farther than the symptom, will do well to explain his conduct when he does not combat a symptom. By virtue of his solicitude for the patient and his knowledge of nosography, which enables him to foresee the prognosis, he can persuade his patient to accept the probable evolution of the disease. He will generally (not always!) have the satisfaction of being understood and be able to palliate only the most marked symptoms, while watching the functional disturbances in order to correct them at the opportune moment, and lead the patient to recovery.

"On the other hand, the physician should not systematically refuse a symptomatic measure. A patient who has already profited, or believes he has profited, by the soothing of a symptom through a certain treatment, should not be deprived of the same treatment unless there be good reasons for hoping for better treatment or else fear of some inconvenience. In this respect there is a general rule. As it is always well to let patients speak, even when they speak a great deal, because by speaking they give themselves up and by listening to them we study them and know them better, so it is well, in therapeutics, to be informed by them and take into account their experience of the medicines, without, however, overlooking the possibilities of autosuggestion. This is particularly true as regards the employment of purgatives, sedatives and hypnotics. It is also wise to consider the mentality of certain persons and not to insist on correcting their errors. What is the use of fatiguing a patient by unprofitable discussions? Is it not more sensible to give him the satisfaction of an infinitesimal dose, incapable of any harm, and let him profit by the nervous dynamism which the joy of hope and assurance is capable of arousing?"

Disease Prevention in the Canal Zone

Nearly every one is familiar in a general way with the excellent sanitary work done by the medical authorities in the Canal Zone. In the *Scientific American*, Nov. 9, 1912, Dr. A. J. Orenstein, of the department of sanitation, gives some interesting figures concerning yellow fever and malaria, showing the effect of mosquito extermination. The *Stegomyia calopus*, the yellow fever mosquito, was attacked first by methods which he describes, including the installation of public water-supplies in the cities, and the breeding-places of the *Stegomyia* were practically destroyed. From having been the most numerous species of mosquitoes in Panama and Colon in 1905, the *Stegomyia* has now become the species least frequently encountered. A *Stegomyia* mosquito is now hard to find. The results of this work were soon manifested, as the following figures will show: From July 1, 1904 to June 1, 1905, 77 cases of yellow fever originated on the Isthmus; in June, 1905, 62 cases; in July, 42; in August, 27; in September, 6; in October, 3; in November, 2; December (in Colon), 1. During 1906 there was only one case of yellow fever on the Isthmus, in Colon. Since then not a single case of yellow fever has occurred on the Isthmus, although a continuous influx of non-immunes is taking place.

Malaria was next attacked. Orenstein says that malaria is a disease that undermines a man's health insidiously and lowers his working efficiency to an extent not approached by any other disease with the possible exception of hookworm. After describing the methods employed in the eradication of the anophelines mosquito, which are quite different from those employed in attacking the yellow fever insect, he says that these measures, conscientiously and painstakingly carried out, resulted in reducing the number of malaria cases treated in the hospitals from 6.83 per cent. of the working force per month in 1906 to 1.53 per cent. of the working force per month in 1911, and the death from malaria among employees from 233 in 1906 to 47 in 1911. In 1906 a good deal of preventive work had already been accomplished. What malaria would have done to the working force, had conditions remained as they were in 1904, is indicated by the fact that among 150 U. S. marines stationed at Empire in the Canal Zone in 1904, 170 cases of malaria developed in four months. In addition to the measures employed in reducing the mortality and morbidity from these two dangerous diseases, the steps taken to provide the employees working on the canal with comfortable quarters and wholesome food and recreation, Orenstein says, undoubtedly contributed greatly to the health of the employees as is illustrated by the history of pneumonia among the negroes. In 1906, before provision had been made to feed the laborers, and when housing had not been brought up to the present standard, a number of cases of pneumonia occurred among the negro laborers. The mortality from pneumonia was 413 in 1906 and 328 in 1907. A board appointed to study this disease recommended that the laborers be fed by the government and that certain improvements in their housing be made. When these recommendations were carried into effect the number of cases of pneumonia immediately diminished. In 1908 there were but 93 deaths; in 1909, 70; in 1910, 73, and in 1911, 94.

From An Australian Visitor.—Through the courtesy which is extended so warmly to all visitors, I had the opportunity of inspecting the home of the American Medical Asssociation in Chicago, of being present at the annual meeting at Atlantic City, and of there conveying to the House of Delegates of the Association the invitation of the . . . Australasian Medical Congress. . . . The organization of the American Medical Association is very thorough. . . . Its history has not been smooth, but it has found itself, and during the last ten years the development has been amazing. . . . It has become abundantly clear in Australia that our small congress cannot satisfactorily transact business when sitting as a whole. The American Medical Association remits all business matters to a body known as the House of Delegates, which comprises about 150 members, that is, approximately one delegate to every 500 members. . . . It is this separation of the purely scientific from the business side which is, in my judgment, giving the Association such strength. The delegates are sufficiently numerous to be thoroughly representative, and can divide into committees and appoint external committees for many diverse purposes. At Atlantic City the perfection of the organization was obvious. The House of Delegates sat continuously while the scientific business was transacted elsewhere. . . . The facts relating to the Association are worth recording. The home is a seven-story fire-proof building in Chicago, which provides accommodation for a modern printing office, chemical laboratories for food and drug testing, administrative offices, an educational department and a complete index department, and thus we find among the activities of the Association the establishment of a record of the career of every medical student and practitioner, so that in future the professional

career of a medical man will be followed and recorded step by step. Furthermore, the organization and the work done by every medical school in the country is inspected and recorded, and the facts are published. It is largely owing to this sagacious step that so many inferior schools have been closed and others have raised their standards. Any practitioner desiring information about any "patent medicine" or drug can obtain it promptly. Those, for example, who wish to know the composition of Odol, the value of Sanatogen, or the therapeutic value of serums, have simply to write and at once learn what they are using. In other words, a rational therapy is in sight. The Association has dealt with the "patent-medicine" problem. If any manufacturing firm wants to advertise in THE JOURNAL, the nature of the compound must be disclosed . . . and verified. Every testimonial given by a medical man to a drug-house is recorded and examined. On the "quacks" a straight-out warfare is waged by a proper method of simply publishing the facts. Furthermore, the Association periodically produces a bulletin of useful medical information and forwards it to the lay press of the United States, so that the public may know in a proper way what is occurring in the medical world. These achievements have not been effected without opposition, and references have been made to the "Great Medical Trust," and so forth. The public has cause to understand, however, that the game is being played honestly and intelligently. Among other work done are propaganda for the prevention of blindness, institution of health day in the schools, when lectures are given by medical men, the establishment of a modern museum of safety appliances, and the organization of postgraduate work. . . . Is there any reason why we in Australia should not build up an analogous organization? . . . Is there any reason why, in Melbourne, we should not have suitable buildings, with a permanent staff, and in a similar way emulate our American brethren?—Dr. James W. Barrett, Melbourne, in *Australian Medical Journal*.

Quackery in England.—The answer to that question [protection to human beings] reveals a state of affairs that constitutes a blot on our national intelligence. Any ignorant person, such as a farm laborer, a blacksmith or a hairdresser, may claim to cure any disease under the sun, and may, without fear of punishment, do to death any one foolish enough to trust his nonsensical claims. As a matter of fact, many quacks make large or even princely incomes, whereas the average medical practitioner lives and dies a poor man. Think of the irony of that situation! Imagine a young man in search of a career asking advice of a candid senior as to the prospects of medical practice. "My dear sir," might well be the reply, "if you want a simple competency you will, sooner or later, acquire that as a general practitioner, or, after some longer years of waiting, you may secure a much larger income as a specialist or consultant. Truth compels me to add, however, that as a bone-setter, or as the universal provider of cures by physical exercises, or as the proprietor of a nostrum, you may within a few years attain a huge fortune. Needless to say, neither of these unlicensed methods demands a particle of study, whereas at least five years of hard work and the expenditure of a large sum of money are needed to secure a medical qualification."—*Med. Press and Circular*.

Tropical Residence and Copious Water-Drinking.—The late Dr. Paul C. Freer, in a study of the effects of tropical sunlight (*Philippine Journal of Science*), arrived at two interesting conclusions concerning residence in the tropics and the use of water by soldiers on the march. He believed that in a climate like that of the Philippines, with the sea modifying the extremes of temperature, and with a large proportion of cloudy weather, the white man, by taking proper precautions, should not find it deleterious, and need only seek the shade to avoid danger from even the greatest insolation. Soldiers on the march or other persons compelled to spend much time in the sunlight should wear white underclothing and helmets and should be supplied with an abundance of safe water, the two canteens allowed the soldiers not being sufficient, in Freer's opinion, to maintain a proper equilibrium of body fluids, allowing sufficient perspiration to carry away the excess of body heat. Likewise copious water-drinking in any country in hot weather, with free perspiration, tends to reduce discomfort from excessive heat. The vice of iced drinks is that they are too cold to be taken into the stomach in large enough quantities for free and cooling perspiration, and their coldness defeats the very purpose for which they are taken—to cool the body.

Marriages

MARCUS DENIS CRONIN, M.D., Albany, N. Y., to Miss Helen Margaret Doyle of Syracuse, N. Y., in Watervliet, N. Y., February 1.

JOSEPH A. VALENTA, M.D., Iowa City, Ia., to Miss Maud Claire Katzenmeyer of Lone Tree, Ia., at Iowa City, February 4.

WILLIAM HERBERT PEARCE, M.D., Baltimore, to Miss Sarah Francis Ferguson, at Charleston, S. C., February 4.

JACOB CASSON GEIGER, JR., M.D., Berkeley, Cal., to Miss Florence Gourrier of Alexandria, La., January 30.

ALFRED W. BRINHAM, M.D., Scalp Level, Pa., to Miss Wilhelmina Meyer of Wellersburg, Pa., January 29.

CHARLES ROBERT MULLONG, M.D., Norfolk, Neb., to Miss Ethel C. Givens of Sioux City, Ia., January 11.

FREDERICK WILLIAM LAMB, M.D., Cincinnati, to Miss Ninon Lenox Traver of New York City, January 29.

RALPH WALKER MCDOWELL, M.D., U. S. Navy, to Miss Ruth Noyes of Washington, D. C., February 17.

ANDREW F. TUTTLE, M.D., Spray, N. C., to Miss Daisy King Jones of Ridgeway, Va., January 30.

L. LAFAYETTE BOND, M.D., Denison, Ia., to Miss Florence Faulkner of Helena, Ark., recently.

JOHN GEORGE JOHNSON, M.D., to Miss Emma Bellows Roe, both of Brooklyn, February 7.

PHILLIP H. STEWART, M.D., to Mrs Lula Lincoln, both of Paducah, February 3.

Deaths

Henry Downes Geddings, M.D. Medical College of the State of South Carolina, Charleston, 1880; for seven years assistant surgeon-general, U. S. P. H. Service; died at his home in Washington, February 13, from cerebral hemorrhage, aged 54. After his graduation Dr. Geddings practiced for eight years before entering the public service. He was an assistant surgeon from 1888 to 1892, serving in the Marine Hospital at Stapleton, Staten Island, and at the Key West (Fla.) Quarantine. He received his promotion to passed-assistant surgeon in 1892 and while in this grade, served at the South Atlantic Quarantine and at Washington; he was made surgeon in 1904 and from that time until 1909 was retained on duty in Washington, later being ordered to Naples, Italy, which was his last station. He was an excellent administrative officer and a veritable genius in the organization and administration of quarantine camps established during epidemics. Dr. Geddings was a member of the American Medical Association, represented his service at three international sanitary conventions and was a delegate from his service to the International Congress on Hygiene and Demography. On his return from Italy, Dr. Geddings was taken ill with cerebral embolism and never regained his health thereafter.

Francis F. Corson, M.D. University of Pennsylvania, Philadelphia, 1869; a member of the Medical Society of New Jersey; at various times a member of the staff of Kirkbride's, the State Hospital for the Insane, Trenton, and the Home for Feeble-Minded Women, Vineland, N. J.; first physician in charge of the State Hospital for Epileptics, Skillman; for ten years a resident of Bridgeton; died suddenly from heart disease, February 1, aged 65.

Benjamin Forbes Graham, M.D. Starling Medical College, Columbus, O., 1865; a member of the American Medical Association; a veteran of the Civil War and one of the oldest specialists on diseases of the eye and ear of Minneapolis; died suddenly at his home in that city, February 2, from influenza, aged 73.

Lewis W. Steinbach, M.D. Jefferson Medical College, 1880; a member of the American Medical Association; professor of surgery in the Philadelphia Polyclinic; recorder of the Philadelphia Academy of Surgery; visiting and consulting surgeon for the Philadelphia and Jewish hospitals; noted for his work among Hebrew charitable institutions; died at his home in Philadelphia, February 10, from pneumonia, aged 61. The resolutions of the members of the staff of Mount Sinai Hospital remark on Dr. Steinbach's continual self-sacrifice in his "devotion to the poor and sick at whose appeal he was ever ready to respond. His conscientiousness and energy . . . were an inspiration to us all."

Edward Hanna Small, M.D. University of Pennsylvania, Philadelphia, 1885; formerly a member of the American Medical Association, and chairman of the Section on Pediatrics in 1895; first member elected in the Pittsburgh Academy of Medicine and the founder of its library; lecturer on pediatrics, Western Pennsylvania Medical College; physician to the Pittsburgh Home for the Friendless and a member of the staff of the Pittsburgh Hospital for Sick Children and the South Side Hospital; prominent in all professional activities—scientific, sociologic and philanthropic; died in Saranac Lake, N. Y., February 3, from tuberculosis, aged 52.

Thomas Overton Meredith, M.D. Baltimore Medical College, 1887; of Harrodsburg, Ky.; a member of the American Medical Association; local surgeon at Harrodsburg for the Southern and Cincinnati, New Orleans and Texas railways; formerly president of the Central Kentucky Medical Association and president of the City Bank of Burgin, Ky.; died at a hospital in Rochester, Minn., January 30, after a surgical operation, aged 49.

John W. Dal, M.D. Northwestern University Medical School, Chicago, 1878; a member of the American Medical Association and Chicago Medico-Legal Society; for many years an esteemed practitioner of northwest Chicago; aged 58; died at his summer home in West Olive, Mich., February 14, from carcinoma of the tongue and throat, for which operation had been performed a year ago at Wesley Hospital.

Henry Francis Ballard, M.D. Rush Medical College, 1882; a member of the American Medical Association; for thirty years a practitioner of Chenoa, Ill., and for nearly fifteen years secretary of the board of education; died in St. Francis Hospital, Peoria, February 7, two weeks after an operation for perforating ulcer of the stomach, aged 60.

William Beattie Nesbitt, M.D. Trinity Medical College, Toronto, Ont., 1887; president of the Farmers Bank of Toronto which failed in 1910; formerly a member of the Ontario legislature; a veteran of the Riel Rebellion and registrar of West Toronto; died at his home in Toronto, February 1, from nephritis, aged 45.

Thomas Gulick Birch, M.D. Yale Medical School, 1865; Harvard Medical School, 1866; surgeon of U. S. Volunteers during the Civil War and later a medical officer in the British Service in India; one of the founders of St. Luke's Hospital, Newburgh, N. Y.; died at his home in that city, February 1, aged 75.

Augustus R. Wright, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1900; of Lumpkin, Ga.; a member of the Medical Association of Georgia; died in the Pilcher Hospital, Brooklyn, N. Y., January 29, after an operation for decapsulation of the kidney for interstitial nephritis, aged 46.

Eli James Smith, M.D. University of Michigan, Ann Arbor, 1878; a member of the American Medical Association; for the last twenty years a practitioner of Neenah, Wis.; was found dead in a bathroom in the Theda Clark Memorial Hospital in that city, January 31, from heart disease, aged 56.

Peter Willett, M.D. Western Reserve University, Cleveland, 1860; surgeon of the One Hundred and Eighty-Second Ohio Volunteer Infantry during the Civil War; for forty-seven years a practitioner of Elmore, O.; died at his home, January 2, from disseminated sclerosis, aged 79.

Hamlin Smith, M.D. Medical College of Ohio, Cincinnati, 1860; since 1863 a resident of Brownstown, Ind.; postmaster for eleven years; deputy U. S. Revenue Collector from 1864 to 1866 and deputy U. S. Marshal in 1870; died at his home in Brownstown, January 28, aged 74.

Charles Allen Peterson, M.D. College of Physicians and Surgeons, New York City, 1884; a member of the Hawaiian Territorial Medical Society; died at his home in Honolulu, January 2, from septicemia, aged 57.

William Green Clark, M.D. University of Tennessee, Nashville, 1903; died at his home near Goodlettsville, Tenn., January 19, from pneumonia, aged 32.

Coleman Nathaniel Clark, M.D. University of Buffalo, N. Y., 1865; a member of the American Medical Association; for more than thirty years a practitioner of Winona County, Minn.; at various times health officer, alderman or member of the board of education of St. Charles; died at his home in that place, January 30, from influenza, aged 73.

Henry Goodwin MacKaye, M.D. Harvard Medical School, 1885; a member of the Rhode Island Medical Society and for nearly twenty-five years a member of the board of trustees of the Newport Hospital; died at his home in Newport, February 2, aged 56.

George W. Taylor, M.D. Syracuse Medical College, Eclectic, Rochester, N. Y., 1853; one of the oldest practitioners of Princeton, Ill.; for many years a minister of the Christian Church; died at his home, January 26, from senile debility, aged 97.

Arthur Stanton Fletcher, M.D. Tufts College, Boston, Mass., 1906; a member of the Maine Medical Association and secretary of the Waterville Clinical Society; died at his home in Waterville, January 31, from bronchial pneumonia, aged 31.

Edward Pius O'Donnell, M.D. University of Pennsylvania, Philadelphia, 1906; a member of the Medical Society of the State of Pennsylvania; died at the home of his father in Hecksecherville, February 2, after a long illness, aged 34.

Clarence W. Zurcher, M.D. College of Physicians and Surgeons, Baltimore, 1911; an intern for fifteen months thereafter at Mercy Hospital, Baltimore; died at his home in Leetonia, O., Dec. 27, 1912, from scarlet fever, aged 25.

Samuel Newton Burgen, M.D. Keokuk (Iowa), 1868; formerly of North Topeka, and a member of the local board of health; died at his home in Oklahoma City, Okla, December 2, from cerebral hemorrhage, aged 71.

William Wormley, M.D. Jefferson Medical College, 1883; formerly a practitioner of Lancaster, Pa., and later a druggist in Philadelphia; died at his home in the latter city, January 29, from pneumonia, aged 60.

William D. Brown, M.D. University of Louisville, Ky., 1894; formerly of Slaughtersville and Julian, Ky.; died at his home in Hopkinsville, Ky., January 27, from the effects of an overdose of morphin, aged 63.

Frank A. Hausneck (license, Missouri, 1900); a practitioner since 1863; formerly of Kansas, but for twenty years a resident of St. Louis; died at his home, January 30, from cirrhosis of the liver, aged 76.

William Bazaliel Carpenter, M.D. Long Island College Hospital, Brooklyn, 1886; a member of the State Medical Association of Texas; died at his home in Mart, February 4, from pneumonia, aged 64.

Edward H. Parker, M.D. Hahnemann Medical College, Chicago, 1879; a member of the American Medical Association; died at his home in Eau Claire, Wis., February 8, from heart disease, aged 57.

Isaac B. Sensenig, M.D. Bellevue Hospital Medical College, 1869; a member of the Medical Society of the State of Pennsylvania; died at his home in Harrisburg, February 5, from dropsy, aged 65.

William Francis Decker, M.D. Jefferson Medical College, 1878; for more than twenty-five years a practitioner of Philadelphia; died at his home in Newfoundland, Pa., January 26, from pneumonia.

William Sandel, M.D. New Orleans School of Medicine, 1858; for more than half a century a practitioner of Ouachita Parish, La.; died at the home of his son in Monroe, January 29, aged 74.

David William Jump, M.D. University of Michigan, Ann Arbor, 1872; a member of the Will County (Ill.) Board of Supervisors; died at his home in Plainfield, about February 3, aged 65.

Helen Amanda Goodspeed, M.D. Eclectic Medical College of the City of New York, 1870; died at her home in Worcester, Mass., January 23, from diabetes, aged 69.

Kate B. Peterson, M.D. Bennett Medical College, Chicago, 1885; died at her home in Chicago, January 20, from sepsis, due to a phlegmon of the leg, aged 76.

William Espey Srofe, M.D. Cincinnati College of Medicine and Surgery, 1892; died at his home in Norwood, O., January 12, from intestinal toxemia, aged 40.

Curtis R. Willson, M.D. University of Louisville, Ky., 1856; of Ola, Ark.; died, January 16, at the home of his son in Ola, from senile debility, aged 84.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SUPPORTING THE COUNCIL

What One Editor Thinks of the Matter

The letter given below has been received from an aggressive member of the American Medical Association who recognizes the evils that afflict our profession and desires to fight them. He is the editor of a medical journal that is owned by one of the state medical societies and one, it is needless to say, that is supporting the Association in its fight against fraud in proprietary medicines. In other words, no advertisement of proprietary medicines is acceptable to the journal he edits unless such remedies have been passed on and approved by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies. We believe the reading of his letter—which, by the way, was a personal one—will bring some of the apathetic ones to a realization of the problems that beset us. Here is the letter in part—of course it was not intended for publication:

". . . I do not believe that you realize just what the conditions are in the smaller communities. In your position it is easy to think that everything is going along in a satisfactory manner, for I presume that you do not come in contact to any great extent with the evils of the profession. [On the contrary, we do realize to the fullest extent the conditions to which our correspondent refers. The editor of a medical journal can hardly remain in ignorance of the abuses that have crept into the medical profession, even if he would. In fact, the doctor himself recognizes the vantage-point he, as an editor, has in learning the unpleasant things within the profession.—ED.] It is easy for men who have good positions or practices to be rather self-satisfied and give little attention to the evils and inconsistencies that exist on every hand. Were it not for my position as editor probably I would be numbered among the apathetic ones, for I have more than I can do in a professional way and prosperity always has a tendency to make a man easy-going. . . .

"Then the question of supporting the Council on Pharmacy and Chemistry is another one which merits more consideration than we have given it. [We think so, too.—ED.] I do not believe that we are justified in making such strenuous efforts to reform the daily press and protect the public until after we have cleaned up our medical journals and made an effort to protect the public from the evils of incompetency and dishonesty in the medical profession. [The very thing that we have been hammering on to the point of weariness.—ED.] The only criticism I have of THE JOURNAL A. M. A., is its lack of nerve in attacking some of these problems that confront us. [THE JOURNAL is seldom accused of lack of nerve; it is more often charged with having too much!—ED.] THE JOURNAL A. M. A. is the best medical periodical in the world without exception. [The doctor's judgment is unimpeachable.—ED.] and it has done a remarkable amount of reform work, but it has only touched the edges of evils in the medical profession. [This is true.—ED.] . . .

"Concerning this question of support of the Council, it is no wonder that Parke, Davis & Co. and some other manufacturers feel that the Council's work is not counting for much when leaders in the profession are positively ignoring the work of the Council. [Just what we have been saying for years.—ED.] I know of a number of prominent physicians who are prescribing some of the preparations that have been condemned by the Council . . . [So do we, we are sorry to say.—ED.]

"So far as I am personally concerned I am through with temporizing, and the 'kid glove' manner of handling the vital subjects. I propose to hit the nail on the head when I know that I am right. [May he have the hammer of Thor.—ED.] I do not desire a libel suit on my hands, but when I have the facts I shall publish them if I think the information will help the medical profession. It is a little hard for the average editor to look over the advertising income and do the right thing at the expense of the purse, but I think the medical profession should be given to understand that such effort is to be supported or else the medical profession should cease to own and operate medical journals. [No doubt about it.—ED.]

. . .

"The state journals that are trying to do the right thing are having a struggle. They need all the support and encouragement that they can obtain. The support they obtain from their own state associations is very faint-hearted and lacking that sincerity and enthusiasm that makes for good. [Unfortunately, this is true.—ED.] I do not believe that very much, if any comment would be offered if I lowered the bars and ran my journal the way that some other state journals are run." [This also, we may sorrowfully admit. Right here lies our weakness. The work of the Council on Pharmacy and Chemistry and the attitude of those medical journals that are supporting the Council, are, apparently, too far ahead of the procession. The position they take is looked on by physicians as utopian, when it should be considered a matter of course. When the average physician—and it is the *average* physician who counts—views the proprietary evil in its true light, it will be a pleasure to conduct a medical journal with a due regard for decency. At present it is a "demnition grind."—ED.]

THE LAY PRESS AND THE NOSTRUM EVIL

What Some Editors and Publishers Think of It

Hardly a day passes that we do not receive letters from editors, publishers or advertising managers asking for information about this, that or the other "patent medicine" or quasimedical device. We believe that it will prove both interesting and instructive to the readers of THE JOURNAL if we give portions of some of the letters that we are receiving so frequently. Here are some quotations from letters picked out at random:

Mr. Robert S. Walker, Chattanooga, Tenn., president and managing editor of the *Southern Fruit Grower*, wrote, in part:

"We thank you very much for the book which you recently sent us entitled, 'Nostrums and Quackery.' We have been using our energies trying to educate our readers to the dangers in patent medicines, and in this, we have succeeded very well. We are in hearty sympathy with your efforts for suppressing this evil, and wish you much success."

The editor of another journal devoted to fruit-growing, Mr. E. H. Shepard, Hood River, Ore., writes regarding his publication, *Better Fruit:*

"I want, personally, to thank you for your book on nostrums, etc., and in reply would say that we do not carry any 'patent-medicine,' quack-doctor or nostrum advertisements, neither any other questionable advertising."

Nor are the city dailies behind, as the following letter from Mr. E. G. Lee of the *Minneapolis Journal* testifies:

"I am interested in the censoring of advertising of these medicines, and believe that your reports would contain just the information that I am looking for."

And this, also, regarding the *Detroit Times*, written by Karl D. Murchey:

"Our attention has been called to the publications of the American Medical Association and we believe that we could make good use of the pamphlets that have been issued from time to time if you will send us a set."

While religious journals, as a class, were, a few years ago, among the worst offenders in the acceptance of fraudulent advertising, some of them have always rejected such material while others have thrown it out as soon as the matter was brought to their attention. The following from a letter by Mr. Fitzgerald S. Parker, editor of the *Epworth Era* tells its own story:

"I thank you very much for your recent letter giving me information concerning Foso Co., who are seeking entrance to the pages of the *Era* for advertising. Your information in this and similar cases has been of important service in enabling us to keep undesirable advertisements out of the *Era*."

And this by Mr. J. Pressly Barrett, editor of the *Herald of Gospel Liberty:*

"The Vitae-Ore pamphlet you sent has not yet been received. I hope it will yet come, as I am anxious to know the facts. I do not like to trouble you so often, but I am determined to rid our paper of every unworthy advertisement, as soon as I can find it is unworthy."

The following from R. E. Skelton of *Sunset Magazine* shows what effect one of THE JOURNAL'S many articles on medical frauds had:

"In your issue of Feb. 10, 1912, you published an article on Piapao, which latter, I believe, has been proved a fake.

"You no doubt have seen the advertising in our magazine and I am very desirous of having this bogus advertising taken out of our columns. For that reason won't you mail me the issue mentioned so that I may send it to our home office; in that way we can get rid of the only objectionable advertising carried by *Sunset*.

"I can assure you that had we known he was a bogus advertiser his ad. would never have appeared in our columns."

The advertising pages of the better class of farm journals have for some time been remarkably clean. The following letter from Mr. John M. Stahl, president of the Illinois Farmer Company is particularly well worth reading. The closing paragraph expresses, tersely and forcibly, the whole problem:

"We notice that in your last bulletin you commend a certain religious paper because it does not insert patent medicine or fraudulent advertising. The paper that thus carefully guards its advertising columns is entitled to your commendation, and you should know that very nearly every farm paper thus guards its advertising columns.

"For more than twenty years past, it has been the settled policy of the *Illinois Farmer* and *Farmer's Call* not to insert any advertising that will cheat or offend any of its readers, and it goes to all members of the family. *Of course we do not insert any medical advertising.*" [Italics ours.—ED.]

What newspapers in the smaller cities can do to protect the public, is illustrated by this letter from Mr. J. Frank Keeley, advertising director of the *Four States Press*, Texarkana:

"For a number of years I have steadfastly refused to handle advertising from grafters and others of their ilk, purporting to have a cure-all for such diseases as are commonly recognized as incurable, and recently declined to accept a rather large advertising contract for the 'United Doctors' and was instrumental in having the evening paper here also decline to accept this advertising. The result is that the 'United Doctors' did not come to Texarkana."

It is such matter as this that makes the fight seem worth while. If the same degree of interest were exhibited by the publishers and editors of medical journals the "ethical proprietary" evil would be well on the way toward solution as the "patent medicine" evil already is.

DIGIPOTEN—WHAT IS IT?

A correspondent, who wishes to sign himself "A Pharmacist Subscriber," writes:

"What is Digipoten? Has it been passed on by the Council on Pharmacy and Chemistry? An advertisement states:

"It contains several active glucosids of digitalis leaves, practically without a trace of inert matter.

"Further on the same advertisement states:

"Dissolved, it makes a beautiful, green fluid.

"The last statement reads much as if Digipoten was merely another name for a powdered extract of digitalis, but as the green coloring matter of digitalis is not medicinally potent, so far as I know, it does not agree with the first claim quoted.

"We standardize it (by tests on the frog) to an exact strength, so the doctor may regulate the dosage to a nicety, avoiding dangerous cumulation.

"How does the standardization by frogs help the doctor to 'regulate the dosage to a nicety?' And then, too, is it possible that the manufacturer of Digipoten—the Abbott Alkaloidal Company—really places any dependence on frogs when in years gone by it has preached that only clinical results were worth while? If the Abbott Alkaloidal Company standardizes this digitalis preparation has it possibly also undertaken to standardize its other heart drug, Cactin?

"Its chemistry being done, it does not irritate and distress the stomach as the fluid preparations so often do.

"'Its chemistry being done' is almost artistic, provided you read it sufficiently rapidly; but as for sense or meaning, I fail to find any. Besides, is it not a proved fact that its effect on the stomach is a property of the digitalis principles themselves?

"It is not 'cumulative.'

"Is this not a rank falsehood? The reason I ask these questions is that I fear that the advertisement contains a misprint and that the statement 'See that your druggist is stocked' probably should read 'See that your druggist is stuck.'"

Digipoten seems to be an ordinary extract of digitalis diluted with sugar of milk. It has not been accepted by the Council on Pharmacy and Chemistry. Evidently "A Pharmacist Subscriber" is not familiar with the fact that many statements occurring in the literature advertising proprietaries are not to be taken too seriously. Of course digitalis glucosids are not of a beautiful green color, but glucosids in pure form are rather expensive and difficult to prepare, while an extract is comparatively easy to make and inexpensive. In calling attention to this really harmless, beautiful, green color the manufacturers of Digipoten seem willing to make a virtue of necessity. While Digipoten is not claimed to be more active than digitalis, it sells at a little more than $40 a pound wholesale, or one hundred times the price of digitalis leaf of equal activity. "Its chemistry being done," etc., is merely one of those statements which appear so frequently in advertisements of this sort, and to which no particular meaning is to be attached. At any rate, the facetious comments of our correspondent serve quite as well as any we can offer.

TURNER OBESITY CURE—MR. TURNER EXPLAINS

The following letter received from the titular head of the "Dr. Turner Co.," throws further light on the methods of that concern:

On June 22, 1912, an article appeared in THE JOURNAL of the American Medical Association dealing with a fraudulent obesity cure concern, the "Dr. Turner Company" of Syracuse, N. Y. May I ask you to publish the following facts to show my very slight connection with the company that bore my name and to show also that I was not wilfully guilty of wrong-doing?

In 1909, E. Virgil Neal [of the Tokalon Company] asked me to write a short article on obesity. It was to be based on personal experience and was not written as a medical treatise, since I am not a physician, the title M.D. being added to my name by the Syracuse concern. Neal purchased my article on a royalty basis by contract. My impression was that it would be sold as a booklet and I had no idea that it would become part of a fraudulent "obesity cure." I did not at the time fully comprehend the terms of the contract which gave the right to use my name in the business but to me no control of the business methods. Indeed, it distinctly stipulated that I should have nothing whatever to do with the management and conduct of the business.

After getting my article, Neal "revamped" it and added the sensational features. The various adjuncts to the "system" including the "Concentrated Food Tablets," etc., were developments of his fertile brain and were entirely absent in the matter given him. In the early part of 1912, the advertising of the "Dr. Turner Co." was called to my attention. It was so fraudulent that pressure was brought to bear and the "Dr. Turner Co." was wound up, all advertising discontinued and a refund of money to any dissatisfied customer was agreed on.

FRANCIS M. TURNER, Pittsburgh, Pa.

Mr. Turner's letter is a verification of THE JOURNAL article. It was there stated that he was "but a figurehead in the obesity company that bears his name" and that E. Virgil Neal (alias X. La Motte Sage) was the evil genius that controlled the "Dr. Turner Company." This letter further bears out the supplementary statement made by us in the new edition of "Nostrums and Quackery," namely, that pressure had apparently been brought to bear on the "Dr. Turner Company" so that it was no longer advertised in the United States. The fraud, however, is still being advertised, or was a few weeks ago, in that lush and verdant field for discredited American medical fakes, the British Isles.

Patent Medicines and Public Health.—While much that is now sold in the drug-stores represents merely a harmless or sometimes useful physician's prescription, the aggregate result of the "patent medicine" is the building up of gigantic systems of robbery on the one hand and a corresponding damage to public health on the other.—David Starr Jordan, *Science*.

Correspondence

Gerster's Disapproval of the Haslam Traction Bar

To the Editor:—My article, describing a turnbuckle and clamp method for reducing fragments of fractures of long bones in the open operation, was considered by you worthy of an abstract in the Current Medical Literature Department (THE JOURNAL, Nov. 30, 1912, p. 2002). It may therefore interest your readers for me to serve notice for their protection that an instrument put on the market and called by some "Haslam's or Haslam's modification of Gerster's" (traction bar) and called by others "Gerster's traction bar," does not fulfil the requirements outlined in my article.

JOHN C. A. GERSTER, M.D., New York.

A copy of the letter given above was sent to the manufacturer referred to, who replies:

To the Editor:—We designed our instrument but one of our competitors copied it and called it Gerster's traction bar. We will continue to sell our traction bar, but we will not call it by any other name than Haslam's. We thought it a compliment to Dr. Gerster to call it Haslam's modification of Gerster's traction bar, but since he objects we will drop his name and take it all ourselves, being the rightful owners.

FRED HASLAM & CO. INC., Brooklyn, by JOHN J. DOUGLASS.

Phylacogens

To the Editor:—I am pleased with the editorial in the Feb. 1, 1913, issue on "Phylacogens." While I was an intern at the Boston City Hospital, I assisted Parke, Davis and Company's agent to administer the "filtrates" to a number of patients. In the majority of cases, I saw no marked improvement. The type of case that improved with "filtrates" had improved with the same rapidity under ordinary hospital treatment. In some cases relapses occurred under filtrates with such a marked increase in symptoms that the patients refused to receive any more injections. The company's representative appeared unduly enthusiastic over his results. His aim seemed to be that of gathering brilliant clinical results at any cost. There was no check put on his results in the form of control cases.

H. J. CRONIN, M.D., Cambridge, Mass.

P. S.—I assume that "Phylacogens" is the proprietary name for the "filtrates" of gonococcus, streptococcus, etc.

Misstatement Concerning Phylacogen

To the Editor:—I wish to correct, through your columns, a statement which occurs in Parke, Davis and Company's *Therapeutic Notes*, Special Phylacogen Number, January, 1913. On page 56, it is said that Phylacogens were discussed at a meeting of the Fayette County Medical Society, Connellsville, Pa., June 18, 1912. On that date the physicians of Connellsville were invited by a local druggist to assemble in the parlors of the Arlington Hotel to hear a talk on "Serums and Vaccines." About a dozen attended and were plentifully supplied with cigars, beer and Phylacogen claims by one of Parke, Davis and Company's hired men.

The Fayette County Medical Society held no meeting in June, 1912, and has at no time discussed Phylacogen or any other proprietary medicine.

E. B. EDIE, M.D., Connellsville, Pa.
Secretary, the Fayette County Medical Society.

The Role of Prevention.—In the future of medicine, the mere removal of disease must play more and more a subordinate part. Most disease can be prevented. Above all therapeutics stands sanitation. It is possible to remove causes of disease long before any disease begins. It is possible to heal our patients long before they are sick. Our knowledge in many fields is now adequate for this result. No one can be attacked by an infectious disease unless we have somehow or other permitted the infection.—David Starr Jordan, *Science*.

Association News

THE MINNEAPOLIS SESSION

Announcement of the Local Committee for the Next Annual Session of the Association

Dr. Frank C. Todd, chairman of the local Committee on Arrangements for the next annual session of the American Medical Association, in Minneapolis, June 17-20, announces the following physicians as officers of subcommittees. All communications to this committee or to any of the subcommittees should be addressed to 1106 Donaldson Building, Minneapolis, where a clearing-house has been established for all matters pertaining to the arrangements for the session.

COMMITTEE ON	CHAIRMAN	SECRETARY
FINANCE	George D. Head	Earl R. Hare
CLINICS	James E. Moore	A. C. Strachauer
ENTERTAINMENT	T. S. Roberts	J. F. Avery
OUTSIDE EXCURSIONS	H. H. Kimball	John H. Morse
SECTION ENTERTAINMENT	A. E. Wilcox	R. T. LaVake
SCIENTIFIC EXHIBITS	Thomas G. Lee	Fred L. Adair
AUTOMOBILE DRIVES	E. C. Robitshek	C. E. Dutton
REGISTRATION	Arthur T. Mann	A. S. Hamilton
HOTELS	S. Marx White	E. J. Huenekens
HALLS AND MEETING-PLACES	H. E. Robertson	J. W. Bell
POST-OFFICE AND PHONES	C. A. Donaldson	C. C. Maland
ALUMNI MEETINGS	Richard J. Hill	E. K. Greene
PRINTING	J. G. Cross	E. S. Strout
ALLIED MEETINGS	Horace Newhart	W. H. Condit
PRESS AND PUBLICITY	Richard A. Beard	
PROGRAM	John W. Bell	E. J. Huenekens
WOMEN PHYSICIANS	Eleanor Hill	Laura Lane
RECEPTION AT RAILROADS	F. A. Knights	M. J. Lynch
COMMERCIAL EXHIBITS	C. H. Bradley	A. E. Hedback
GENERAL HOSPITALITY, INFORMATION AND ATTENDANCE	A. E. Benjamin	C. H. Keene
LOCAL TRANSPORTATION	A. H. Parks	E. A. Moren
PRESIDENT'S RECEPTION	A. A Law	Henry W. Cook
SECTION MEETINGS	J. P. Sedgwick	A. E. Johann
LADIES' ENTERTAINMENT	Mrs. W. A. Jones	
ST. PAUL ENTERTAINMENT	J. W. Chamberlain	
ST. PAUL FINANCE	T. W. Stumm	C. E. Smith.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

LIABILITY FOR OBSTETRIC OPERATION WITHOUT THE CONSENT OF THE HUSBAND

To the Editor:—In delivering a woman, if the physician sees fit to use instruments, does he have to secure the consent of the husband? Should the husband not consent, would the physician be held legally responsible for the consequences? H.

ANSWER.—The law recognizes no difference between an obstetric operation and a surgical operation. The consent of the patient to an operation is, of course, necessary, if she is conscious or in a condition to give or withhold consent. If she is unconscious or for any other reason unable to decide, then the consent of the husband or next of kin must be obtained if possible. If the woman agrees to the operation, the husband has no right to withhold his consent. The Court of Appeals of Maryland in the well-known case of Janney vs. Housekeeper says: "The husband has no right to withhold from his wife the medical assistance which her case might receive."

It is hardly proper to say that a physician is legally responsible for the consequences of an operation. The law holds that anyone undertaking to render medical services as a physician or surgeon must possess a reasonable degree of knowledge, skill and experience; he must exercise ordinary care and diligence and he must use his best judgment in all cases of doubt as to the best method of treatment. He is liable for damages resulting from lack of knowledge, skill or experience, from negligence or from poor judgment. In the case of any obstetric operation his liability is just as great when the husband has given his consent as when that consent is withheld.

It should be remembered that when an injury is done to the wife there is a double cause of action. One lies in favor of the husband for the loss of her services and society during the time she was suffering from the injury and also for the cost of

nursing and caring for her while ill. The other is in favor of the wife for the injury inflicted on her to compensate her for the suffering caused thereby.

A suit for malpractice may be brought against a physician on the most flimsy pretext in cases in which there is no reasonable ground for complaint and may cause him much inconvenience and result in considerable harm to his reputation. Should a physician operate on a woman without the consent or against the veto of her husband, he would incur more risk of a malpractice suit. For this reason, it is always desirable for an operator to secure the consent of the husband as well as that of the wife. Consent should not be limited to any specific operation but should include any operation deemed necessary by the physician. It is advisable to have a nurse or some other witness for the physician present when the arrangement is made.

It is possible, however, that a physician may feel compelled to operate without the husband's consent. Suppose a case of cord prolapse with a head presenting in the pelvis, the cervix dilated and all other conditions favorable for a forceps extraction. The patient consents but the husband absolutely refuses. There is no time for a long discussion. The life of the child is at stake. To save the child the physician may feel compelled to operate in spite of the opposition of the husband and the risk of a malpractice suit. In such cases he undoubtedly would be sustained by the courts.

CAUSES OF EXFOLIATION OF THE EPIDERMIS

To the Editor:—In what diseases is there a dermatitis which is followed by very general exfoliation?

During an epidemic of "sore throat" a man with a beginning tonsillitis produced contused penetrating wounds over both tibiae by striking them against the axle of his automobile. Portions of the clothing and dirt from the axle were in the wounds. The tissues became inflamed for 2 inches around these wounds, and the feet and ankles would pit on pressure, but there was no swelling above the wounds. The tonsillitis—of which he had had many attacks—was very severe, and of the follicular character. Three days after the injury, and five days after the beginning of the tonsillitis, the feet became scarlet. When the foot was lifted from the bed the skin became pale—abnormally so. When the foot was again put on a level with the body it again became scarlet. This redness gradually spread over the entire body. Except in its scarlet hue the eruption—if it could be called an eruption—did not resemble scarlet fever, neither was the tongue characteristic of scarlet fever; but, about ten days after the patient recovered from the tonsillitis, and while the wounds were still unhealed, exfoliation became general. T. L. D.

ANSWER.—Exfoliation of the epidermis may occur from any cause which results in an acute hyperemia of the skin. The process is usually thought of in connection with the so-called eruptive fevers or exanthems, but it also follows drug eruptions, thermic exposure, etc., in short, the hyperemia causes it. And anything which causes the hyperemia of the skin naturally is the cause of exfoliation. Under this head come the acute infectious diseases, many skin diseases, belladonna and other drug eruptions. The case in question looks like a scarlatiniform dermatitis from some drug, probably an iodin application, such as iodoform or orthoform.

ANESTHOL

To the Editor:—I wish to obtain some information regarding the anesthetic "Anesthol," referred to in the recent "Anesthesia Number" of THE JOURNAL (Nov. 23, 1912). Where can I get it? Is it being used to any extent in the North? Druggists here seem to know nothing about it. JAMAS M. MOSER, M.D., Washington, D. C.

ANSWER.—A mixture of ethyl chlorid, ether and chloroform termed Anesthol was described by Willy Meyer in THE JOURNAL, Feb. 28, 1903, p. 553. Anesthol was stated to be composed by volume, of 17 per cent. of ethyl chlorid, 35.89 per cent. of chloroform and 47.10 per cent. of ether. A further discussion of the use of Anesthol by the same author appeared in THE JOURNAL, March 7, 1903, p. 642. The mixture, according to Dr. Meyer, is not proprietary, but one which any pharmacist may put up. We are not aware that it has come into general use.

TRANSMISSIBILITY OF BRIGHT'S DISEASE

To the Editor:—Will you kindly inform me through THE JOURNAL where I can find literature, or articles published, concerning the theory that Bright's disease is either an infectious or a transmissible disease? Is Bright's disease so considered?

HENRY A. JONES, M.D., Howard, R. I.

ANSWER.—We find no references in recent literature dealing with Bright's disease as an infectious or transmissible disease. It is not so considered.

AGE OF PARENTS AS A FACTOR IN HEREDITY

To the Editor:—Could you give me references to literature on the influence that the age of parents may have over the mental heredity of their children? J. H.

ANSWER.—The literature on this subject is usually included in articles or works with titles which do not indicate this special topic.

Lapage in his book on "Feeble-Mindedness in Children of School Age" says:

> The age of the mother may have some effect, but many deficient children are born early in the family. Mongolian imbeciles are often the last children of a large family, and it has been suggested that this condition is the result of a wearing out of the reproductive powers of the mother by repeated pregnancies.

E. L. Hunt, in his article on "Hereditary and Congenital Causes of Exceptional Development," in the Proceedings of the Exercises and Conferences of the National Association for the Study and Education of Exceptional Children, April 1, 1910, says:

> Most authors agree that the relative age of the parents at the time of conception is a factor. Duncan, for instance, was of the opinion that premature and late marriages were influential in the production of idiocy. Langdon Down found that in one-quarter of the idiots which he examined there was a disparity of more than ten years in the ages of the parents. I am of the opinion that a man produces better, stronger and more intellectual posterity before 40 rather than after. I believe that this is so because the average city dweller is a better man physically before 40. I believe that a great disparity in years has some slight detrimental effect. These are two causes, however, which do not play any great part in the etiology of the subject. . . .
>
> Primogeniture is often spoken of as a factor. I do not believe that the first-born child is more apt to be the weak-minded one than the last-born. But I do believe that if there is a defective hereditary factor it will be more apt to appear in the eldest and in the youngest than in the intermediate children. This is probably to be accounted for by the fact that the reproductive powers of the mother in the case of the first-born child are not well established; in the last, have begun to flag.

THE RELATION OF MODERN EDUCATION TO DYSTOCIA

To the Editor:—In view of the fact that modern education is conducive to increase of the difficulties of parturition by causing a greater average in the size of the child's head, without an increase in the pelvis, would it be advisable to terminate pregnancy from seven to twenty days before term? Can you advise me of any literature on the subject? M.D., Anaheim, Cal.

ANSWER.—This question is an illustration of illogical mental processes—assumption of false premises and drawing unwarranted conclusions. There is no evidence that modern education has any more tendency to increase the size of the child's head than the education of former times. If education did increase the size of the child's head there is no reason to believe that the enlargement would be transmitted to offspring. It is generally believed that acquired characteristics are not transmitted. Could it be shown that the average size of the child's head at birth is greater for any reason than formerly, it would not follow that the female pelvis had remained stationary. It is quite possible or even probable that the pelvis as well as the whole skeleton would also increase in size. Hence there is no reason for the question regarding the induction of premature labor as a routine practice. The indications for inducing premature labor in cases of contracted pelves and other pathologic conditions are given in all text-books on obstetrics.

BLUMBERG'S SIGN IN APPENDICITIS

To the Editor:—Can you tell me something about Blumberg's sign in appendicitis? E. C. BRUSH, M.D., Zanesville, Ohio.

ANSWER.—This is the short, acute pain which is felt by the patient when the hand pressed over McBurney's point is lifted suddenly. It occurs in all forms of peritoneal inflammation. In active peritonitis one will find that the pain caused by the pressure of the hand on the abdomen is less than that caused by the sudden removal of the pressure; on the other hand, during the subsidence of the inflammatory process, the pain of pressure is greater than that produced by sudden relief of pressure.

NO STOMATITIS NEED BE EXPECTED DURING LACTATION

To the Editor:—I occasionally see an anemic, debilitated, middle-aged woman suffering from some apparent intestinal condition, giving a history of having had "nursing sore mouth" at some time or other, so diagnosed and treated by an older physician. Is there any condition that would cause, particularly during the lactation period, any special form of stomatitis or gastritis in the mother? J. N. H.

ANSWER.—So far as we can learn, no special condition of the kind mentioned is recognized.

VOLKMANN'S ISCHEMIC PARALYSIS

To the Editor:—Please give me literature, published since 1906, on Volkmann's ischemic paralysis or contracture.

C. J. HABHEGGER, M.D., Watertown, Wis.

ANSWER.—The following may be referred to:

Huntington, T. W.: Ischemic Paralysis and Contraction Treated by Bone-Shortening, *Cal. State Jour. Med.*, July, 1907.
Powers, Charles A.: The Ischemic Paralysis and Contracture of Volkmann, THE JOURNAL, March 2, 1907, p. 759.
Boynton, Frances N.: A Case of Volkmann's Paralysis and Contracture, THE JOURNAL, May 18, 1907, p. 1675.
Sayre, R. H.: Volkmann's Ischemic Paralysis and Contracture, *Am. Jour. Orthop. Surg.*, November, 1908.
Allen, C. W.: Case of Volkmann's Ischemic Paralysis, *New Orleans Med. and Surg. Jour.*, January, 1909.
Thomas, J. J.: Nerve Involvement of Ischemic Paralysis and Contracture, *Ann. Surg.*, March, 1909.
Taylor, A. S.: Volkmann's Ischemic Paralysis, *Ann. Surg.*, September, 1908.
Avyagi, T.: Ischemic Paralysis, *Deutsch. med. Wchnschr.*, Feb. 1, 1912.
Goett, H.: Prevention of Postoperative Ischemic Paralysis, *Zentralbl. f. Chir.*, Feb. 10, 1912.
Burianek, B.: Postoperative Ischemic Paralysis, *Wien. klin. Wchnschr.*, Feb. 29, 1912.
Kausch, W.: Ischemic Paralysis, *Zentralbl. f. Chir.*, April 13, 1912.
Powers, C. A.: Fourth Account of a Previously Reported Case of the Ischemic Paralysis and Contracture of Volkmann, THE JOURNAL, May 11, 1912, p. 1436.
Lauenstein, C.: Prophylaxis of Ischemic Paralysis, *Zentralbl. f. Chir.*, May 25, 1912.
Sayre, R. H.: Treatment of Volkmann's Ischemic Paralysis and Contracture by Method of Robert Jones, *Am. Jour. Orthop. Surg.*, May, 1912.
Hull, R. L.: Ischemic Paralysis, *Jour. Oklahoma State Med. Assn.*, September, 1912.
Orve, H. W.: Simple Operation for Relief of Deformity in Certain Cases of Volkmann's Paralysis, *Am. Jour. Orthop. Surg.*, November, 1912.

PRACTICE OF MEDICINE AS A LIFE-WORK

To the Editor:—Please give references which will be of assistance in preparing a talk on the practice of medicine as a life-work.

C. L. N.

ANSWER.—The following may be consulted:

Baum, W. L.: The Medical Profession and the Public, *Illinois Med. Jour.*, July, 1908.
Cathell: The Physician Himself, F. A. Davis Co., 1914 Cherry Street, Philadelphia.
Lawbaugh: The Physician, His Duties and Relation to the Profession, *Jour. Michigan State Med. Soc.*, Detroit, October, 1909.
McWhorter: Relation of Medicine to Other Professions, *Alabama Med. Jour.*, Birmingham, May, 1909.
Morrison, I. T. J.: Aspects of Medicine as a Profession, *Brit. Med. Jour.*, Oct. 14, 1911.
Wilson, J. C.: The Relation of the Medical Profession to the People, *Med. Fortnightly*, Nov. 10, 1911.
The Medical Profession, *Med. News*, April 16, 1904.
The Practice of Medicine as a Career, The Army and Navy Medical Service (and a number of other articles of interest to the student), *Med. Rec.*, New York, April 24, 1909.
The Third Annual Report of the Carnegie Foundation, Washington, D. C., discusses medicine as a business and as a profession, ideals of the profession, etc.

THE PAN-AMERICAN MEDICAL CONGRESS

To the Editor:—Please tell me where I can obtain information regarding the Pan-American Medical Congress at Lima, Peru?

D. C. B., M.D., Omaha.

ANSWER.—THE JOURNAL published notices of this meeting, June 1, 1912, p. 1698, June 22, p. 1964, and November 2, p. 1636. Dr. Ramon Guiteras, 80 Madison Avenue, New York, is the secretary of the International Executive Committee. Members of the committee at Lima are Drs. D. Alvarez and P. Espada. Dr. Julian Arce of Lima, Peru, is president of the section on medicine. Dr. E. Odriozola, also of Lima, is president of the National Academy of Medicine of Peru. The meeting will be held Aug. 3-10, 1913, in connection with the fifth Latin-American Medical Congress and the Congress on Hygiene.

COMPOSITION OF FOLIN AND MACALLUM'S URIC ACID REAGENT

To the Editor:—Please give the composition of the uric acid reagent used by Folin and Macallum in the process described in the abstract published in THE JOURNAL, Jan. 11, 1913, p. 161.

J. H. S.

ANSWER.—This reagent is a phosphotungstic acid prepared by boiling 100 gm. of sodium tungstate with 80 c.c. of 85 per cent. phosphoric acid and 750 c.c. of water for a few hours and then diluting to one liter. This formula was published by Folin and Denis in the *Journal of Biological Chemistry*, 1912, xii, 239.

OPEN TREATMENT FOR BURNS

To the Editor:—Please explain what is meant by the "open treatment for burns"; what are its advantages and how is it carried out? Is my understanding correct that absolutely nothing is put on the burn—that it is merely washed and left open to heal?

E. S. DUPUY, M.D., Summerlee, W. Va.

ANSWER.—The uncovered skin is left exposed to the air, blebs are removed, the area gently dried, dusted with stearate of zinc or other bland-dusting powder, and fanned to hasten drying and the formation of crusts. The unburned portion of the surface should be bathed and cleansed often, and the temperature of the room should be high in order to favor the action of the skin. The air must be kept as pure as possible and the utmost cleanliness maintained about the bed linen and everything else that comes in contact with the patient to guard against infection. The patient is quickly relieved of pain by this method of treatment.

The question was answered in this department of THE JOURNAL, Aug. 18, 1906, p. 529, and Sept. 22, 1911, p. 1076, but an article by Dr. Haldor Sneve of St. Paul, July 1, 1905, p. 1, took the matter up in detail. There was an editorial comment in the same issue, page 48.

CAUSE OF HAIR-SPLITTING IN HYPERTRICHOSIS

To the Editor:—Please give me some information as to the possible cause of the terminal splitting of the hair of a woman's head in hypertrichosis. What therapeutic measures are adopted in these cases?

J. J. S. S.

ANSWER.—The condition is apparently a nutritional disturbance of trophic origin, concerning which little is known. The brittleness and splitting are in part overcome by oiling the hair, which is usually abnormally dry. If the splitting occurs at the tips, it can be prevented from extending by clipping off the split ends. Nothing is gained by the barber's common procedure of singeing.

TOBACCO AND THE CIGARET

Prof. L. Allen Highley, Fulton, Mo.: See THE JOURNAL, Nov. 16, 1912, p. 1798, and Jan. 30, 1909, p. 386.

PROCHOWNICK'S DIET IN PREGNANCY

Dr. F. C. Floeckinger, Taylor, Tex.: You will find this given at some length Oct. 28, 1911, p. 1474.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

RECENT LEGISLATIVE DEVELOPMENTS

ARKANSAS

The senate has passed S. B. 30, creating a State Board of Health.

CALIFORNIA

A bill, drafted by a prominent member of the California Federation of Women's Clubs and introduced in the senate, requires a health certificate as a condition for a marriage license, establishes a bureau of marriage and child welfare, and provides for the appointment of two physicians in each county to carry out the objects of the bill.

ILLINOIS

S. B. 66 provides for the registration of births and deaths. The Illinois Commission on Uniform Marriage and Divorce Laws has recommended the passage of bills nullifying marriages contracted in one state to avoid prohibitions in other states. An interval of fifteen days between the application for and the issuance of a marriage license, the publication of all details regarding both parties, and the refusal of applications from imbeciles and persons under the influence of liquor, are also recommended.

INDIANA

The Keegan bill, regulating the sale of habit-forming drugs, has been amended following a conference with the State Board of Health so that physicians, dentists and veterinary surgeons may dispense opiates. A bill has been introduced reducing the number of health officers in the state from 533 to 103, requiring health officers to give their entire time, and fixing salaries on a basis of population, ranging from $1,200 in counties having a population of less than 5,000, to $2,500 in counties having a population of more than 50,000. The bill for the extermination of rats passed the senate by a vote of 43 to 2. The bill prohibiting common drinking-cups passed the senate by a vote of 39 to 1. A chiropractic bill has been introduced in the senate.

IOWA

A bill creating a department of vital statistics under the State Board of Health has been introduced. This bill was drafted by the secretary of the State Board of Health, and follows the general plan of the model bill.

KANSAS

H. B. 617 is a sterilization bill. A bill approved by the State Board of Health provides for a fine of $100 and six months' imprisonment for failure to use preventive methods for ophthalmia neonatorum. The nurses' registration bill has passed the senate and the house.

MASSACHUSETTS

The Conant bill provides that when application is made for marriage license, the clerk receiving the application shall issue a physical examination blank to each applicant. The blank, filled out and signed by a registered physician, is to be sent in each case by registered mail to the other party in the marriage agreement. The parties are permitted to marry regardless of the contents of the report, the only aim of the bill being to give each a knowledge of the exact physical condition of the prospective mate.

MINNESOTA

Bills have been introduced providing a contagious disease hospital for Minneapolis, increasing the term of coroners to six years, prohibiting common drinking-cups and providing for whole-time health officers.

MISSOURI

Bills have been introduced separating the business and medical departments of the state hospitals, creating the office of medical supervisor for the four state insane hospitals, forbidding fee-splitting and amending the medical practice act.

NEBRASKA

The legislative committee of the State Medical Society has indorsed S. F. 100, requiring the reporting of occupational diseases; S. F. 142, prohibiting marriage licenses to those physically unfit; S. F. 155, regulating the marking of manufactured articles; S. F. 159, providing for the sanitation of factories, mills and workshops; S. F. 188, prohibiting misleading advertising; S. F. 310, prohibiting the division of fees by physicians; S. F. 420, increasing the quarantine powers of the State Board of Health; H. R. 120, prohibiting common drinking-cups; H. R. 215, providing for the inspection of public schools and private hospitals; H. R. 425, appropriating $5,000 for a state board of health laboratory, and $7,000 for maintenance; H. R. 541, forbidding the sale of certain drugs and catarrh cures, except on physicians' prescriptions; H. R. 660, providing for medical examination of school children; H. R. 685, appropriating $5,000 for the investigation of criminal abortion; H. R. 697, forbidding the selling of any patent medicine or food article if false statements regarding them are made on the container or in newspaper advertisements; H. R. 825, providing for the sterilization of criminals. The committee has disapproved of two bills restricting the State Board of Control, as well as S. F. 97, authorizing the practice of "suggestive therapeutics"; S. F. 132, a sterilization bill; S. F. 134, a bill regulating marriage; S. F. 209, regulating non-medical healing; S. F. 402, exempting mental and spiritual healers from the medical practice act; H. R. 25, providing for the exemption of non-medical healers; H. R. 94, a sterilization bill; H. R. 141, a bill regulating marriage; H. R. 243, requiring all physicians to write prescriptions in English; and H. R. 631 and 736, legalizing non-medical healing.

NEW JERSEY

H. B. 49 provides for a State Board of Osteopathic Examiners.

NEW YORK

Two bills have been introduced regulating the sale of habit-forming drugs; also a bill authorizing counties to condemn sites for tuberculosis hospitals.

NORTH CAROLINA

Bills have been introduced in the house providing for inspection and regulation of railroad stations, coaches, hotels, boarding-houses and cafés.

NORTH DAKOTA

A sterilization bill has been introduced in the senate.

OKLAHOMA

A bill regulating marriages has been defeated in the house. The senate has passed a bill appropriating $10,000 to stamp out the small-pox epidemic now existing in the southeastern part of the state. The following bills have been introduced in the senate: S. 26, a chiropractic bill; S. 27, regulating cold storage; S. 29, providing for the medical inspection of rural schools; S. 219, defining the practice of medicine. The following bills in the house are in committee: H. B. 315, providing for a state tuberculosis sanatorium; H. B. 316, defining the powers of local boards of health in preventing tuberculosis; H. B. 333, authorizing an annual school of instruction for local health officers. The following bills have been recommended for passage: H. B. 335, a sterilization bill; H. B. 337, providing for the reporting of contagious and infectious diseases; H. B. 338, providing for the inspection of all penal and charitable institutions of the state; H. B. 343, regulating the sale of patent and proprietary remedies and prohibiting misbranding; H. B. 347, providing for the sanitation of all places where foods or drugs are prepared or sold. H. B. 353, regulating railway hotels, has passed the house. H. B. 334, providing for the reporting of births and deaths has been indefinitely postponed. H. B. 282, regulating marriage has been defeated. The following new bills have been introduced: H. B. 567, regulating marriage licenses, and requiring health certificates for men; H. B. 500, fixing the fees of physicians and surgeons; in the senate, S. 335, repealing the state board of health act, and substituting a superintendent of health; S. 341, requiring a special license for physicians performing major surgical operations.

OREGON

The senate has passed S. B. 346, requiring male applicants for a marriage license to present health certificates. Both houses have passed bills forbidding spitting and the pollution of streams.

OHIO

The following bills have been introduced: a sterilization bill, a naturopathic bill, a bill providing for the physical inspection of school children, a bill removing tuberculous patients from county hospitals to state tuberculosis hospitals, a bill requiring the reporting of occupational diseases, a bill creating a state board of examination for trained nurses, and an optometry bill.

PENNSYLVANIA

A bill has been introduced, making it a misdemeanor for any physician or surgeon to practice while under the influence of intoxicating liquor or of any drug; also, a bill establishing a bureau of child hygiene.

RHODE ISLAND

A bill has been introduced in the senate, creating a state hospital for advanced cases of tuberculosis.

SOUTH DAKOTA

H. B. 78 is an optometry bill. H. B. 227 provides one day's rest in seven for employees in certain occupations. H. B. 254

provides for the position of county health officers. H. B. 256 creates a board of public health and medical examiners.

TEXAS

A bill has been introduced in the house, limiting the fees of physicians and surgeons to $5 for obstetric cases, $100 for surgical operations and $2 for visits. Other bills prohibit misrepresentation as to the curative power of drugs, define medical malpractice, and prohibit medical services by any physicians intoxicated or under the influence of any drug.

UTAH

The State Board of Health has asked for legislation protecting the state water-supply, regulating marriage, providing for the prevention of tuberculosis, appointing a state tuberculosis commission and increasing the power of the board.

VERMONT

Governor Fletcher has vetoed the sterilization bill.

SUPERVISORY COUNTY HEALTH OFFICERS

A plan for the creation of a county health officer to have supervision over the health of the rural communities in New York in connection with the local health officers, except in the larger cities, was presented recently to the special health commission appointed by Governor Sulzer by Dr. Charles F. Bolduan, of the Health Department of New York City (*American Practitioner*, January, 1913).

The plan provides for the retention of the present town and village health officers, but subordinates these to a new official, the county health officer, who is to be a trained public health expert. Town and village boards are to be abolished and present officers are to be governed by a set of rules and regulations of state-wide application. The supreme health authority of the state would be vested in the "State Health Session," composed of all the county health officers, together with the State Commissioner of Health. This body would have the power of making public health regulations. Provision is also made for a "Health Council" composed of three county and the city health officers selected by the "State Health Session" and the state health commissioner, and the general medical officer of the city of New York. The duties of the council would be to regulate and coordinate intercounty public health affairs and act in the place of the "Health Session."

The plan also provides for the qualifications and manner of appointment of these officers, etc., and sets forth the duties of present health officers, who would under the plan become medical and sanitary inspectors. The county health officer would be held responsible for health conditions in the county, and would play an influential part in educating the public in health matters, keep posted on the vital statistics of the county, investigate and take measures to check epidemics, etc.

Another feature of the plan is the establishment of facilities for making laboratory examinations in the case of infectious diseases, etc. The financing of the plan is also provided for; the charges would be so distributed that they would largely be borne by the state as a whole, thus enabling sparsely settled counties to have as efficient service as any others.

Medical Cooperative Association.—One of the advantages of the organization of the profession in Belgium is the Coopérative Médicale of Liége which secures reductions on the prices of books and instruments for its members and is now considering whether to make similar arrangements for supplying dressings and other druggists' sundries, etc. The membership is restricted to physicians and medical students. The annual fee is 40 cents (2 francs), and this fee is reduced to 10 cents (50 centimes) for the members of various medical societies which grant the Coopérative Médicale an annual subsidy of $20. Each member of the Coopérative is further obligated to buy a $2 share of stock redeemable in two years. The reduction on books amounts to 14 or 17 per cent. and on instruments from 5 to 20 per cent. The president of the Coopérative for the current year is Dr. A. Leroy, rue Ed. Wacken 21, Liége, Belgium.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 11. Sec., Dr. Charles A. Tuttle, 196 York St.; Homeopathic, New Haven, March 11. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, New Haven, March 11. Sec., Dr. Thomas S. Hodge, 19 Main St., Torrington.

IOWA: Lincoln School Building, Des Moines, March 4-6. Sec., Dr. Guilford H. Sumner, State House.

MAINE: City Hall, Portland, March 11-12. Sec., Dr. Frank W. Searle, 776 Congress Street.

MASSACHUSETTS: State House, Boston, March 11-13. Sec., Dr. Edwin B. Harvey, Room 159, State House.

MISSOURI: St. Louis, February 24-26. Sec., Dr. Frank B. Hiller, State House, Jefferson City.

WYOMING: State House, Cheyenne, March 5-7. Sec., Dr. A. B. Tonkin, Riverton.

The Drake-Iowa Medical School Merger

The following resolutions were adopted by the faculty of the College of Medicine of Drake University, February 10:

WHEREAS, The Medical Faculty of Drake University has been informed by the trustees of the University that all their efforts to secure the necessary funds for the endowment and permanent support of the medical school, in accordance with the highest standards of requirement, have been unsuccessful; and

WHEREAS, The faculty recognizes its responsibility to the members of the teaching staff, many of whom are dependent for their academic careers on the standards maintained by the institution with which they are connected, and to the students who place their confidence in the school for the proper training in the professional work with which they are to serve humanity, and as it seems impossible to secure the material assistance necessary to maintain the medical school in the front rank of institutions of its kind; be it

Resolved, That the trustees of Drake University be recommended to merge the medical school at the close of the present session with the College of Medicine of the State University of Iowa; and be it further

Resolved, that with the merger of the Drake University Medical School, this faculty urges that all the interests of its members, and the medical profession of the state be centralized in the College of Medicine of the State University of Iowa, at Iowa City, and that this faculty wishes to go on record as expressing its fullest confidence in the State University to assume this responsibility and fulfil its mission in every respect.

South Carolina June Report

Dr. A. Earle Boozer, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, June 11-13, 1912. The number of subjects examined in was 8; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 128, of whom 91 passed including one osteopath and 34 failed including 2 osteopaths. Three candidates did not complete the examination. Two candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
George Washington University	(1908) 77.9;	(1909)	82.2
Howard University, Washington, D. C.		(1910)	83.5
University of Georgia		(1912)	80.7, 83.4
Atlanta School of Medicine		(1912)	77.5
Atlanta College of Phys. and Surg.	(1912) 75, 75.5, 78.7		83.6
University of Louisville		(1912)	86
Tulane University of Louisiana		(1910)	83
Johns Hopkins University		(1901)	90.5
University of Maryland	(1910) 76.7; (1911) 83.5; (1912) 84.4, 85, 86.7, 87.2, 87.5, 89.9.		
Tufts College Medical School		(1911)	79.7
College of Phys. and Surg., Boston	(1910) 81.6;	(1911)	81.5
University of Michigan, Dept. of Med. and Surg.		(1910)	88.1
Leonard Medical School		(1912) 77,	79.5
Jefferson Medical College		(1912) 87.6, 91	
Medical College of the State of South Carolina	(1892) 75; (1910) 75, 75.4; (1911) 76.1, 79.9; (1912) 75, 75.4, 75.5, 76.9, 77.1, 77.6, 77.7, 77.9, 77.9, 78, 78.1, 78.4, 78.5, 79.2, 79.5, 79.7, 80, 80.5, 80.5, 80.6, 80.6, 80.9, 81.4, 81.5, 81.5, 82.4, 82.5, 82.6, 82.7, 82.7, 82.7, 82.9, 83, 83.6, 83.9, 84.1, 84.6, 84.6, 84.6, 84.7, 84.7, 84.9, 85.4, 85.4, 85.9, 86.1, 86.2, 86.2, 86.4, 86.9, 87.2, 88.1, 89.		

Vanderbilt University	(1912)	83.1, 88.6
Medical College of Virginia	(1912)	76.5

FAILED

University of Georgia	(1912)	59.9, 69.5
Atlanta College of Physicians and Surgeons	(1912)	71.2
Georgia College of Eclectic Medicine and Surgery	(1912)	46.5, 63
Hospital Medical College, Atlanta	(1911)	42.2
Southern College of Medicine and Surgery, Atlanta	(1912)	62.6
College of Physicians and Surgeons, Baltimore	(1910)	73
Lincoln Memorial University	(1912)	72.4
Leonard Medical School	(1906) 68.2; (1910) 70; (1912)	43.1
Medical College of the State of South Carolina	(1908) 60; (1909) 66.2, 72.5; (1911) 60.5, 68.5, 70; (1912) 64, 68.7, 69.2, 70.1, 70.6, 73.2.	
Meharry Medical College	(1907) 64; (1909) 71.7; (1911)	60.1
University of West Tennessee	(1910)	67.2
University of Tennessee	(1905)	40.2
Memphis Hospital Medical College	(1911) 54,	66.6
Gate City Medical College	(1910)	66.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Maryland	(1910)	Maryland
Medical College of Virginia	(1890)	Virginia

California December Report

Dr. Charles L. Tisdale, secretary of the California Board of Medical Examiners, reports the written examination held at Los Angeles, Dec. 3-6, 1912. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 134, of whom 89 passed including 20 osteopaths and 45 failed including 20 osteopaths. The following colleges were represented:

PASSED

College	Year Grad	Per Cent.
Univ. of California	(1911) 85.4, 86.1; (1912) 81.1, 82.5, 82.9, 90	
College of Physicians and Surgeons, Los Angeles	(1909) 85.1; (1911) 81.3; (1912) 77.6, 78.2, 80.1.	
College of Physicians and Surgeons, San Francisco	(1912)	75
Oakland College of Medicine and Surgery	(1912) 77.5, 78.3, 79, 84.4, 85.6.	
University of Southern California	(1905)	78.4
Cooper Medical College	(1912) 75.8, 81	
Denver and Gross College of Medicine	(1906)	81.3
University of Colorado	(1911)	80
George Washington University	(1912)	86.2
Northwestern Univ. Medical School	(1902) 85.8; (1911)	81.5
Rush Medical College	(1891) 89; (1897) 81.5; (1902) 86.2; (1905) 80.6; (1912) 85.8.	
Northwestern University Woman's Medical School	(1887)	87.8
College of Physicians and Surgeons, Chicago	(1891) 87.4; (1911) 85.8; (1912) 84.4, 84.8, 85.8, 88.	
Chicago Medical College	(1880)	90
Central College of Phys. and Surg., Indianapolis	(1886)	85.2
Drake University	(1897)	82.2
Baltimore Medical College	(1900)	91.3
Harvard Medical School	(1911) 89.3; (1912) 80.1, 83.5	
Detroit College of Medicine	(1894)	86
University of Minnesota, College of Medicine and Surgery	(1902) 82.4; (1910) 81.9.	
Creighton Medical College	(1912)	79.9
Albany Medical College	(1908)	84.9
New York Homeo. Medical College and Hospital	(1904)	77.1
Cornell University Medical College	(1907)	86.4
New York University Medical College	(1893)	80.4
Ohio Medical University	(1906)	80.2
Miami Medical College	(1873)	81.7
Eclectic Medical College, Cincinnati	(1905)	77.8
Western Reserve University	(1892)	94.4
Univ. of Pennsylvania	(1897) 87.6; (1900) 96.1; (1902)	88.3
Medico-Chirurgical College, Philadelphia	(1895)	81.8
Vanderbilt University	(1891) 91.5; (1908) 86.7; (1912)	85.4
University of the South	(1901)	77.8
University of Virginia	(1911)	84
Wisconsin College of Physicians and Surgeons	(1903)	75.8
University of Toronto, Ontario	(1911)	80.4
University of Genoa, Italy	(1905)	75
University of Florence, Italy	(1904)	76.5

FAILED

College of Physicians and Surgeons, Los Angeles	(1912)	65.7
University of Colorado	(1902)	68.9
Bennett Medical College	(1900)	72.4
Hahnemann Medical College, Chicago	(1890) 73.2; (1905)	64.5
Coll. of Phys. and Surg., Chicago	(1896) 62.2, 74.1; (1912)	71.6
Rush Medical College	(1883) 72.1; (1890)* 76; (1899)*	75.7
University of Louisville	(1905)	70.5
Louisville National Medical College	(1889)	52
Baltimore University	(1899)	66.2
Barnes Medical College	(1911)	67.2
Central Medical College, St. Joseph	(1898)	72.5
Missouri Medical College	(1881)	56.4
Lincoln Medical College	(1906)	69.2
Omaha Medical College	(1895)	64.9
New York University Medical College	(1886)	71.4
Cleveland University of Medicine and Surgery	(1897)	74.2
Eclectic Medical Institute, Cincinnati	(1890)	71.4
Willamette University	(1904)	70.5
Chattanooga Medical College	(1908)	73.1
Tennessee Medical College	(1908)	56.6

* Fell below 60 per cent. in one or more branches.

Book Notices

DUNN'S PURE FOOD AND DRUG LEGAL MANUAL. Federal, State and Territorial General and Special Food, Drug, Paint, Oil and Turpentine Laws, Rules and Regulations, Food Standards, Food Inspection Decisions and Leading Decisions of the Courts. Uniformly Classified and Arranged Cyclopedia of Information. Edited by Charles Wesley Dunn, A.M. Volume 1. Cloth. Price, 2 volumes complete, $12. Pp. 2347. New York: Dunn's Pure Food and Drug Legal Manual Corporation, 32 Liberty St., 1912-1913.

The size of this book illustrates concretely how extensive has been the agitation during the past decade, for purity in food and drugs. But its more than two thousand pages represent only Parts 1 and 2 of Dunn's plan; a second volume is promised, to contain special food and drug laws and an index. The manual is valuable for its actual material. National laws aiming to regulate interstate commerce in the articles mentioned are here given; also those of individual states for business within the state. While the state laws differ widely, yet their aim purports, within state limits, to be similar to that of the federal laws, the protection of individual health. A study of the rendered judgments, here quoted or referred to, would afford valuable information as to how far these aims are being actually realized, and how far their rulings are "inoperative through lack of appropriation" or other causes. This suggests the thought that the book might have been made still more valuable had the "laws repealed" been named—or, better, summarized.

The compiler has recognized the importance of clear arrangement to such a work. His table of topics is a detailed analysis of the contents of both this volume and that which is to come. A layman might perhaps be puzzled at first by such apparent gaps as those between Nos. 52 and 57, or 139—144; his work of examination would have been facilitated by the addition of one line in the text itself indicating the regulations omitted at this point to avoid duplication and referred to only in the table. Abundant footnotes will make verification of statements possible as well as further research. The manual is a most useful book of reference.

CEREBELLAR FUNCTIONS. By Dr. André-Thomas, Ancien Interne des Hôpitaux de Paris. Nervous and Mental Disease Monograph No. 12. Translated by W. Conyers Herring, M.D. Paper. Price, $3. Pp. 222, with 89 illustrations. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912.

Sufficient praise cannot be given the editors of the Nervous and Mental Disease Monograph Series for having made the celebrated monograph of Dr. André-Thomas accessible to English readers. The translation is fair; in fact, it is better than some of the others of this series. The monograph itself furnishes an up-to-date account of a most intricate subject in nervous physiology, that of the cerebellar functions, so much of which is still to be explored. The author is one of the most ardent original workers in the field of cerebellar physiology. In the complete bibliography on the cerebellum his name occurs no less than twenty-three times. An adequate review of this book would require many pages of reading-matter. It will be sufficient to state that neurologist and otologist alike must feel a sense of gratitude to the author for having produced this splendid summary of our knowledge of the cerebellar functions.

OUTLINES OF PSYCHIATRY. By William A. White, M.D., author of "Mental Mechanisms," Superintendent Government Hospital for the Insane, Washington, D. C. Nervous and Mental Disease Monograph Series No. 1. Fourth Edition. Paper. Price, $3. Pp. 318. New York: Journal of Nervous and Mental Disease Publishing Company, 1913.

This edition has several features which especially commend it to new readers. In the running text quotations from case records have been interspersed to aid one in forming a correct idea of a given psychosis. Besides numerous changes of small import calculated to bring the book into harmony with contemporaneous thought the author has added the useful chapter on the Binet-Simon scale for measuring intelligence. We can only reiterate the statement made in a review of a former edition that this book is one of the best small texts on psychiatry in the English language.

STUDIES IN THE PSYCHOLOGY OF INTEMPERANCE. By G. E. Partridge, Ph.D. Cloth. Price, $1 net. Pp. 275. New York: Sturgis & Walton Co., 1912.

The author appeals to those interested in the problem of intemperance. To him the principal reason for the existence of intemperance, which is as old as mankind, is to be found in psychologic and social conditions, rather than in the physical constitution of those addicted to drink. In this opinion he is at variance with many physicians who believe in a hereditary tendency to drug and alcohol addiction. The author traces intoxication to the social life and the religious ceremonial of early nations. He even goes to the extent of saying that "alcohol and its kindred have been of great importance in fostering those social characters on which our present civilization rests. It is difficult to conceive, in fact, what the social life of uncivilized man might have been without the use of alcoholic drinks." The saloon he calls the workingman's club. Under the heading of "Cure" he denounces so-called prohibition and attempts to show its ineffectiveness. Instead he proposes a betterment of social conditions and a complete change of the individual's environment. The book is well written and gives food for reflection. On the whole it reminds one very strongly of Prof. Hugo Münsterberg's article on the alcohol question published in one of the monthly magazines, which produced an endless series of condemnatory criticisms.

THE PSYCHOLOGY OF INSANITY. By Bernard Hart, M.D., Lecturer in Psychiatry, University College Hospital Medical School; Medical Superintendent, Northumberland House Asylum. Cloth. Price, 40 cents net. Pp. 176. New York: G. P. Putnam's Sons, 1912.

Whoever wishes to read an elementary treatise on the new psychology as applied to the neuroses and the psychoses by the Freudian school will find this primer extremely interesting. In our opinion the careful perusal of this small volume by the general practitioner and the non-reading specialist will have a tendency to make the Freudian controversies more dignified. Hitherto the battles between pro- and anti-Freudians have been uninteresting to the spectator owing to ignorance of the terms of the controversy. Henceforth this may be changed; for a few hours' reading of a small pocket-volume may put any one in possession of all the essentials of the new psychology as elucidated by Freud and his school. Those who have been impelled to condemn the new movement because its terminology was unintelligible will henceforth be compelled to seek for weightier arguments. The author of this book deserves credit for having converted a difficult subject into one easily comprehensible.

A TEXT-BOOK OF OBSTETRICS. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. Seventh Edition. Cloth. Price, $6.50 net. Pp. 1013, with 895 illustrations. Philadelphia: W. B. Saunders Company, 1912.

In this edition the author has adhered to his former plan of including in the work diseases, operations and procedures which by most authors have been treated in works separate from obstetrics. There seems to be good reason for this plan, as no one should know better than the obstetrician the diseases which accompany or follow the reproductive function in women. The book has been rearranged to follow a more logical succession of subjects, and has been extensively revised. The section on diseases of the breast has been largely added to. There is a great profusion of illustrations, many of them in color. This book, combining the two usually separate subjects, obstetrics and gynecology, is a convenient and authentic one for the student and general practitioner.

SELECTED PAPERS ON HYSTERIA AND OTHER PSYCHONEUROSES. By Prof. Sigmund Freud. Authorized Translation by A. A. Brill, M.D., Ph.B., Chief of Nervous Department, Bronx Hospital. Nervous and Mental Disease Monograph Series No. 4. Second Edition. Paper. Price, $2.50. Pp. 215. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912.

The translator has incorporated in this, the second edition of Freud's selected papers, two new and important chapters. The one, a translation of the essay on "Wild Psychanalysis," is timely and calculated to prevent unjust criticism of the entire school because of the ignorance of certain so-called disciples of Freud. Parenthetically we may remark that Freud's psychanalysis may at this time be compared with the *x*-ray treatment before we knew of its dangers. Much damage may be done by those unskilled in its use and those others who lack that indescribable something which we call tact. In the essay under consideration Freud calls a halt to what he names "wild" psychanalysis, as followed by those who are unqualified to practice it because they either are not thoroughly familiar with its principles or else lack the necessary qualifications. The other new chapter in this edition deals with "The Future Chances of Psychanalytic Therapy," pronounced a masterpiece of philosophic writing by Freud's followers. Judging from the fact that a second edition of this monograph has become necessary, it would appear that Freud is gaining ground in this country.

BRAIN AND SPINAL CORD. A Manual for the Study of the Morphology and Fiber-Tracts of the Central Nervous System. By Dr. Med. Emil Villiger, Privatdozent in Neurology and Neuropathology in the University of Basel. Translated by George A. Piersol, M.D., Sc.D., Professor of Anatomy in the University of Pennsylvania. From the Third German Edition. Cloth. Price, $4. Pp. 289, with 232 illustrations. Philadelphia: J. B. Lippincott Company, 1912.

This book is extremely popular in Germany first, because of its conciseness, a virtue not often encountered in German texts, and second, because it is sufficiently exhaustive for teaching purposes. Part I gives a detailed account of the morphology of the nervous system, Part II furnishes a splendid description of the fiber tracts, while Part III illustrates the architecture of the brain-stem by a series of consecutive sections. This series is so well executed that it may be said actually to represent the natural preparations, and should be closely studied by those not having access to satisfactory specimens. The translation is so perfect that the reader is never reminded by a clumsy phrase or peculiar paragraphing that he is reading a translated work. The translator has even seen fit to improve the book by the addition of a selected bibliography for the purpose of enabling those who wish to pursue the subject further to find the original papers or the more comprehensive works dealing with the anatomy of the central nervous system. This volume may be worthily placed by the side of those of Obersteiner and Edinger, and we predict that it will soon become the accepted text-book in the leading medical schools.

THERAPEUTISCHE TECHNIK FÜR DIE AERZTLICHE PRAXIS. Herausgegeben von Prof. Dr. Julius Schwalbe, Geh.San.-Rat. Third Edition. Paper. Price, 24 marks. Pp. 1044, with 586 illustrations. Leipsic: Georg Thieme, 1912.

The third edition of this excellent handbook exhibits several improvements on the previous ones. Perhaps the most important is a new chapter on the technic of immunotherapy by Prof. A. C. Wassermann and his assistant, M. Wassermann. The technic and indications of prophylactic and curative serum and vaccinations are briefly described. A number of other new sections are added and the older chapters have been carefully revised to bring them up to date. The whole work is now published in one volume of somewhat more than a thousand pages, well illustrated. The work must appeal strongly to the practicing physician, for it deals almost entirely with technic in the treatment of disease without which the most extensive theoretical knowledge is of little avail.

DISEASES OF THE STOMACH, INTESTINES AND PANCREAS. By Robert Coleman Kemp, M.D., Professor of Gastro-Intestinal Diseases in the New York School of Clinical Medicine. Second Edition. Cloth. Price, $6.50 net. Pp. 1021, with 388 illustrations. Philadelphia: W. B. Saunders Company, 1912.

This work, which has reached its second edition, covers a wide field. The reasons for limiting its scope must have been lack of space rather than logical arrangement. The pancreas is included, but not the liver. Logical grounds for including typhoid fever and not pellagra or for including Brill's disease, now known to be a form of typhus, are not apparent. Drug therapy is given in the needed detail. A somewhat undiscriminating mention is made of various proprietaries, such as Sanatogen, Listerine, Bacillac, Glycothymolin, Urotropin, Hepptine, etc. Carelessness is indicated in the prescriptions, which are a various mixture of Latin, English and undeclined Latin.

OBSTETRICS. A Text-Book for the Use of Practitioners and Students. By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University. Third Edition. Cloth. Price, $6 net. Pp. 977, with 684 illustrations. New York: D. Appleton & Co., 1912.

The author is an obstetrician who has pronounced opinions on the teaching of obstetrics, much of which, in this country at least, he believes to be incomplete and defective. In this he does not except his own school. With definite ideas of what should constitute good obstetric teaching he has prepared this book; it bears the impress of thoroughness in every line, and is at the same time a practical exposition of obstetric practice. Since the last edition was reviewed, the book has been revised materially in many respects, and expresses what the author believes to be sound conclusions from later research on many moot points, such, for instance, as eclampsia. The text offers an exceptionally clear exposition, taken together with the many excellent illustrations, of the management of normal as well as of complicated labor, and of obstetric accidents. The many other procedures connected with the puerperal woman and the new-born infant are equally satisfactory. The matter of artificial feeding has been left almost entirely for the works on children, as only a page is devoted to this subject.

THE HEALTHY BABY. The Care and Feeding of Infants in Sickness and in Health. By Roger H. Dennett, M.D., Instructor in Diseases of Children in the New York Post-Graduate Medical School. Cloth. Price, $1 net. Pp. 235. New York: The Macmillan Company, 1912.

This book is an unusually practical one for a new mother, in that it deems few things too insignificant to explain. Dennett has put himself in the place of the worried mother, anxious to have her baby cared for to the best of her ability, and he answers clearly the thousand and one questions that arise in her mind. Dennett makes careful distinction throughout between symptoms that are immaterial, those that indicate simple treatment by the mother and those that call for a doctor's attention. The tables for records, found in the rear of the book, will prove serviceable.

THE CARE OF THE BODY. By R. S. Woodworth, Professor in Columbia University. Cloth. Price, $1.50 net. Pp. 359. New York: The Macmillan Company, 1912.

This is a popular book on physiology and hygiene, intended primarily for young men. It gives the reader definite instructions as to how he can keep himself in good condition, and at the same time gives him a reason for his actions, in non-technical but scientifically accurate terms. The book is well and interestingly written, and is attractive in its printing and binding. Physicians needing a book on this subject for their patients will find Woodworth's book a satisfactory one to recommend.

THE HOME NURSE'S HANDBOOK OF PRACTICAL NURSING. A Manual for Use in Home Nursing Classes in Young Women's Christian Associations, in Schools for Girls and Young Women, and a Working Text-Book for Mothers, "Practical" Nurses, Trained Attendants and All Who Have Responsibility for the Home Care of the Sick. By Charlotte A. Aikens. Cloth. Price, $1.50 net. Pp. 276, with illustrations. Philadelphia: W. B. Saunders Company, 1912.

Physicians will be glad to know of this book. It is suitable for placing in the hands of lay persons who desire to inform and guide themselves concerning the care of the sick at home. It is practical and helpful, and the advice is well guarded to protect the sick from errors on the part of amateur attendants.

THE PREVENTION OF DENTAL CARIES. By J. Sim Wallace, D.Sc., M.D., L.D.S., Dental Surgeon and Lecturer on Dental Surgery and Pathology, London Hospital. Second Edition. Cloth. Pp. 70, with illustrations. London: The Dental Record, Alston House, Newman Street, W., 1912.

This is a treatise worthy of the attention of the general practitioner, who has opportunities for giving advice as to tooth conservation to his families. One interesting recommendation is that the mouth be rinsed after each meal; another is that no child should end a meal with mush, jam, cake, candy, etc., which are prone to lodge about the teeth, but rather should end with fresh fruit, particularly an apple, which the author calls an excellent cleanser of the teeth.

THE CARRIER PROBLEM IN INFECTIOUS DISEASES. By J. C. G. Ledingham, M.B., D.Sc., Chief Bacteriologist, Lister Institute of Preventive Medicine, London, and J. A. Arkwright, M.D., Assistant Bacteriologist, Lister Institute of Preventive Medicine, London. International Medical Monographs. Cloth. Price, $3.50 net. Pp. 319. New York: Longmans, Green & Co., 1912.

This book is almost a pioneer in the field of text-books on carriers of disease, a subject that is of vast importance in the modern understanding of infectious diseases. The authors have abstracted and summarized the writings of the various workers and writers on the carrier problem, covering typhoid and paratyphoid fevers, diphtheria, epidemic cerebrospinal meningitis, dysentery and cholera. The history, detection and cultural and differential methods are first given in the instance of each specific bacillus or coccus, followed by an abstract of statistical and other information on the rôle of the organism in producing the disease through carriers. The literature seems to be well covered, the authors taking up only the six diseases named because the information concerning them is better worked out. The subject in its definite details is a comparatively new one, and the enterprise of the authors and publishers in thus early presenting the subject is to be commended.

MANUAL OF HUMAN OSTEOLOGY. By A. Francis Dixon, M.B., Sc.D., University Professor of Anatomy and Surgery, Trinity College, Dublin. Cloth. Price, $3 net. Pp. 316, with 178 illustrations. New York: William Wood & Co., 1912.

A concise and helpful handbook, well illustrated.

Medicolegal

Constitutionality of Medicolegal Practice Act—Who Unlawfully Practice Medicine—Need Not Claim to be Physicians—Prayer Treatment by Hindu—Sufficiency of Information—Admissibility of Evidence

(Singh vs. State (Tex.), 146 S. W. R. 891)

The Court of Criminal Appeals of Texas affirms a conviction of the defendant Singh, a Hindu from East India, of unlawfully practicing medicine under chapter 123 of the acts of the thirtieth legislature, overruling a motion for rehearing. The court says that the state introduced one Ball as a witness, who testified that he took his wife to Dallas to be treated for a tumor and cancer of the stomach, and was induced to go to the defendant. He described the treatment given by the defendant, which included present and absent treatments, stating that the defendant would rub the palms of his hands together; that he would lay his hands on the tumor, then draw his hands across the tumor; that he repeated this a number of times, and would throw his hands as if casting it behind him, telling Mrs. Ball that the tumor would go away. He was about thirty minutes in giving the treatment. As to the absent treatment, he told her at a given hour "to look at a picture he had, and to lie straight out, and put her mind on that and be quiet, and not let any noise or person bother her at all."

The defendant contended and introduced witnesses to prove that the only treatment he gave was by prayer; that he did not claim to effect the cures himself, saying his power was from God, and that God effected the cure; and he requested that the jury be instructed that if from the evidence they believed that the defendant used prayer only in his treatment, and held himself out as treating disease through the will of God only, that that was not the practice of medicine as defined by the statute, and they should find the defendant not guilty. There was no error in refusing that instruction and charging the jury, instead, that "any person shall be regarded as practicing medicine within the meaning of this charge who shall treat or offer to treat any disease or disorder, mental or physical, by any system or method, or effect cures thereof, and charge therefor directly or indirectly money or other compensation." Section 13 of the medical practice act defines the meaning of the words "practice of medicine," and it means under that act to treat or offer to treat disease by any system or method. In

those states where the term is not defined by statute, it is construed to relate only to the practice of medicine as popularly understood, but where the term "practice of medicine" has been given a definition by statute, and so worded as to cover all treatment of disease by whatever nature or means, it has been held that the legislature had that power and authority.

The most important of police powers is that of caring for and preserving the health of the citizens of a state, and this power is inherent in sovereignty, and the legislature may pass all such laws as are reasonably necessary to accomplish that purpose. The act of the legislature in question is a reasonable exercise of the police power, for in the act it is provided that nothing in the law shall be construed so as to discriminate against any particular school or system of medical practice.

However, it does provide that no one shall treat, or offer to treat, any disease, mental or physical, or any physical deformity or injury by any system or method, and charge therefor, unless such person has obtained a license from the board of examiners appointed by the governor, and said board is required to examine applicants as to their knowledge of anatomy, physiology, chemistry, histology, pathology, bacteriology, physical diagnosis, surgery, obstetrics, gynecology and hygiene. If a person is of good moral character and passes an examination in the subjects named, he may practice whatever method he deems best for effecting the cure of disease. The subject of the public health being a matter subject to the police power of the state, the legislature has the power to pass laws requiring a certain amount of knowledge on given subjects, which it in its wisdom deems essential to the proper diagnosis and treatment of disease. In the law there is no discrimination as to persons or methods, but all are required to undergo the same examination, and then each and every person licensed may treat disease in the way by him deemed best. The legislature has not sought to say how disease shall be treated by any one, but has simply required that all persons who shall treat or offer to treat disease shall have a knowledge of given subjects; the legislature deeming this essential to the preservation of the health of the citizens of the state. It is not for the courts to say that this is wise or unwise; that the requirements are too onerous or are insufficient to accomplish the purposes intended. The law is not violative of any provision of the constitution, and is but an exercise of the police power on a subject that all the law-writers of note declare is within that power.

The legislature having defined the meaning of the words "practice of medicine" to embrace all "who shall publicly profess to be a physician or surgeon and shall treat or offer to treat disease, etc., also all persons who shall treat or offer to treat disease, etc., for compensation," the court holds that in so defining the words the legislature has rendered liable to the provisions of the act all persons who shall treat disease and charge therefor, regardless of the mode or method used in so doing. Any one who holds himself out as a physician or surgeon is liable under the law, whether he receives compensation or not, while one who does not so hold himself out must be shown to have received compensation either directly or indirectly. In this case the defendant may not have advertised himself as a physician, but he did advertise that he was capable of treating disease, and, when it was shown that he received compensation for his services, he was liable to the penalties provided in the act. And one who made no charge directly, but told all who applied for treatment that he "would receive free-will offerings," would be receiving compensation within the purview of the law, for "indirectly" was used to cover just such evasions.

Other points decided in the case are that the complaint was not insufficient because it did not contain the name of the affiant in the body thereof, when the name of the affiant was at the bottom of the affidavit, and was the party making the same, with the jurat of the officer taking it. Nor was the information insufficient because it did not set forth the school of medicine to which the defendant was alleged to belong, did not set forth the method or system by which it was alleged the defendant effected cures and treated for pay, and did not set forth the particular branch or department of medicine that the defendant practiced or was alleged to have practiced. As a general rule, it is sufficient to charge an offense in substantially the language of the statute creating it.

A check for $10 given by Mr. Ball to the defendant, payable to the latter or order, and containing the words: "1 week's medical treatment for wife," which check was "Paid" and was indorsed on the back with the defendant's name, was admissible in evidence as a circumstance showing that the defendant accepted checks in payment for treating the witness' wife. It was also proper for the witness to state that the defendant had told him he did not give receipts, that it was not necessary as he could not collect by law, for it would show that the defendant was aware of the provisions of the medical practice act and that the business he was pursuing was prohibited by law. Neither was it error to permit the witness to state that the defendant had prescribed for him for catarrh. The defendant was being prosecuted for unlawfully engaging in the practice of medicine by offering to treat diseases and effect cures thereof for money, and all this testimony was admissible as tending to show that he was practicing medicine.

Nor was there error in permitting another witness to state that he had called on the defendant at the "Temple" and asked him if he could cure his wife of neuralgia, and that the defendant stated that he could, and what his charges would be. The main issue in this case was whether or not the defendant was treating and offering to treat diseases for pay, and any statement made by him bearing on that point would be admissible in evidence.

The law does not denounce the treatment of each individual as a separate and distinct offense, but the offense defined is for a person to treat or offer to treat any disease or disorder without having been licensed so to do by the state board, and, while under the information it would be necessary to prove that he did treat the person named and receive pay therefor, yet the state would not be limited to this proof alone under the information in this case, but could introduce other evidence which showed, and tended to show, that the defendant was treating and offering to treat various diseases for compensation. Especially would this be true under the evidence in this case, as the defendant by his evidence was contending that he did not charge for such treatment directly or indirectly, but only accepted free-will offerings.

A Retiring Partner May Sell His Influence and Good Will

(Mills vs. Ressler (Kan.), 125 Pac. R. 58)

The Supreme Court of Kansas holds that a physician, who is a member of a firm practicing a specialty and making use of certain remedies and formulas in such practice, may, on retiring, sell his influence and good will to the firm or its successors, and, having done so, he and any one in collusion with him may be enjoined from doing any act which would prevent the purchasers thereof from enjoying the benefits of such influence and good will to the same extent as they were enjoyed before the sale. While contracts in general restraint of trade or business are void, contracts less restrictive are invalid only when inimical to the public welfare, and they are to be judged, not by the arbitrary measure or extent in time or extent space, but by their reasonableness under all the circumstances, having regard both for the liberty of a person to make beneficial use of his own and the public consequences of such use. And a contract reasonably limiting the right of a physician to practice a specialty is valid.

X-Ray Plates Admissible in Evidence

(Chicago, Burlington & Quincy Railroad Co. vs. Upton (U. S.), 194 Fed. R. 371)

The United States Circuit Court of Appeals, Eighth Circuit, holds that *x*-ray plates taken, showing the extent and character of the plaintiff's (Upton's) injuries, were properly admitted in evidence, after their correctness had been verified by competent evidence. The court does not agree with the contention that prints taken from the plates are alone admissible in evidence, and the plates themselves inadmissible.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

February, CXLV, No. 2, pp. 157-312

1 Disputed Problems Associated with Surgery of Large Intestine. W. J. Mayo, Rochester, Minn.
2 *Relation of Anaphylaxis to Immunity and Disease. V. C. Vaughan, Ann Arbor, Mich.
3 Chronic Purpura and Its Treatment with Animal Serum. H. L. Elsner and F. M. Meader, Syracuse, N. Y.
4 Present Value of Wassermann Reaction. L. S. Milne, Kansas City.
5 *Diaphragmatic Hernia; Report of Case. K. M. Vogel, New York.
6 Factor of Fatigue, with Reference to Industrial Conditions. W. A. White, Washington, D. C.
7 *Topography of Cardiac Valves as Revealed by Roentgen-Rays. G. W. Norris and G. Fetterolf, Philadelphia.
8 Rôle of Stethoscope in Physical Diagnosis. H. Sewall, Denver.
9 *Clinical and Experimental Investigation of Therapeutic Value of Camphor. J. D. Head and R. C. Brooks, Pittsburgh.
10 Some Interesting Negative Results with Phenolsulphonephthalein Test. O. H. P. Pepper and J. H. Austin, Philadelphia.
11 Primary Adenomata of Liver Simulating Hanot's Hypertrophic Liver Cirrhosis. H. C. Gordinier and H. P. Sawyer, Albany, N. Y.

2. **Relation of Anaphylaxis to Immunity.**—All the problems of protein sensitization have not been solved. It seems to be a physiologic law, Vaughan says, that the specific ferments elaborated by living cells are determined by the proteins brought into contact with them, but as yet we know little concerning these bodies which we call ferments. That they are labile chemical bodies resulting from intramolecular rearrangement in the protein molecules of the cell seems a plausible theory, but at present it is only a theory. But little is known of the action of these so-called ferments on their homologous proteins. Knowledge of the chemistry of protein sensitizers is exceedingly limited, and it is highly desirable that work in this direction should be prosecuted with vigor, because sensitizers free from the poisonous group are needed. Furthermore, there is the question, why small doses of protein induce fever while large doses have no effect. At present there is no satisfactory answer to this question. If it could be demonstrated conclusively that the toxins are ferments, the subject of the etiology of disease would be greatly simplified. Vaughan formulates what he believes to be two biologic laws: 1. When the body cells find themselves in contact with, or permeated by, foreign proteins they tend to elaborate specific ferments which digest and destroy the foreign proteins. 2. When body cells are attacked by destructive ferments they tend to elaborate antiferments the function of which is to neutralize the ferments and thus protect the cells.

5. **Diaphragmatic Hernia.**—Vogel believes that diaphragmatic hernia is much commoner than generally supposed, and may exist indefinitely without giving rise to symptoms. Dextrocardia and physical signs suggesting those of pneumothorax should always cause the possibility of this condition to be thought of and lead to careful radiographic study of the thorax. His patient came to the hospital suffering from abdominal pain and other symptoms referable to a stenosis of the large intestine, with attending peritonitis, which ended fatally. The history included no symptoms that could be connected with the astonishing dislocation of the abdominal viscera which was revealed at the autopsy. On opening the thorax the colon was seen occupying the left chest through a left-sided diaphragmatic defect. The spleen weighed 180 grams and was about in the position of the heart. The left lung was collapsed and measured 14 cm. in length, 7 cm. in width, and 2 cm. in thickness. The right lung presented numerous firm adhesions to the chest wall, but was otherwise normal. The left border of the heart was 2.5 cm. to the right of the median line, the right border, 11.5 cm. to the right of the median line, the upper border at the third rib, the apex at the sixth rib, 1.5 cm. inside the mammary line. The left chest was filled with omentum, caput coli, transverse and descending colon; a few inches of the ileum were lying above the diaphragm. The descending colon was straight and ran directly to the brim of the pelvis. The gut was much distended. The omentum was adherent to the transverse colon, making a sort of bag, but was not in any way adherent to the chest wall. The stomach lay above the diaphragm with the duodenum passing through the opening. The hernia could be easily reduced. The hernial opening occupied the posterior and lateral portions of the diaphragm, was about 15 cm. in diameter, and had rounded and somewhat thickened edges. A loop of small intestine was adherent to the sigmoid at the brim of the pelvis. The sigmoid was constricted for a distance of 5 cm., so that even the little finger would not pass through the obstruction. The muscle was thickened above the constriction. The mucosa was practically normal except for four pockets with mouths 0.5 cm. in diameter. These pockets varied in depths from a few millimeters to several centimeters. There was a thick collar of firm inflammatory tissue some 12 cm. long about the sigmoid just above the pelvic brim, binding the gut down to the posterior abdominal wall. There was a band of fat and inflammatory tissue over the surface of the sigmoid, aiding in the constriction. The other organs presented no abnormalities.

7. **Topography of Cardiac Valves.**—In order to determine the exact position on the chest wall of the heart valves, cadavers were injected with 10 per cent. formaldehyd solution and then put into cold storage. When thorough freezing had been secured the head and neck, the upper extremities, and the lower part of the trunk were cut off. The thorax was then cut into frontal sections about one inch thick, the cuts being made parallel with the anterior surface of the chest. Each section was then cleaned up by removing all blood-clots and saw detritus from the heart cavities and large blood-vessels. In this manner distortion was avoided, since all parts were hardened in the position which they occupied at death. Each valve leaflet was carefully dried and then painted with the thickest possible lead paint. This was readily done, for the sections were so thin that all the valves were accessible, and in most instances it was possible to paint both surfaces of the entire eleven leaflets. Finally, after the valves were painted, the sections were superimposed, with the anterior one below, and a skiagram taken. In order to show with greater clearness the relations of the valves to the sternum and ribs, that section of the thorax which comprised the posterior portion and included the vertebral column, the posterior section of the ribs and the thick spinal muscles, was not used. By discarding this portion nothing was lost and much was gained in clarity, since the vertebrae and the posterior part of the ribs were eliminated from the pictures.

In the course of these investigations fifteen bodies were sectioned. It was soon evident, however, that a much larger number would have to be studied before any definite conclusions regarding normal relations could be reached, since many of the cadavers represented pathologic alterations in the topography of the thoracic viscera. Often the heart was displaced as the result of extensive pulmonary tuberculosis, or of hypertrophy of the heart. Other lesions, such as pericardial effusions, atelectatic lungs, etc., furnished additional sources of error. This communication is a preliminary report, and is made in demonstration of an entirely feasible and hitherto unemployed method of studying post mortem the topography of the heart valves in health and disease.

9. **Therapeutic Value of Camphor.**—In planning their bedside study of camphor, the authors limited the investigation to the effects of the drug, as administered hypodermically, on the circulatory apparatus of human subjects exhibiting varying conditions of the cardiovascular apparatus. Camphor was dissolved in oil and administered by single or multiple subcutaneous or intramuscular injection into patients who could be somewhat arbitrarily divided into the following groups: A.—Patients whose circulatory apparatus was apparently normal. B.—Those whose auricles were in clinical fibrillation (confirmed by polygraphic tracings). C.—One patient (two observations) with valvular disease but normal rhythm. D.—

Patients with unclassified cardiovascular diseases, chiefly, however, affecting the myocardium and vascular coats. In addition to the above, two control experiments were conducted. Sterile oil was injected into a patient of Group A and into one of Group B. All the subjects but one were adults in a state of nutrition from fair to good. Records of pulse and of systolic and diastolic blood-pressure were made at frequent intervals covering a period of forty to 270 minutes after the injection of the drug; the usual duration of the observation was about 120 minutes. The patients were frequently questioned as to the presence of subjective symptoms which might be attributable to the camphor, but in not a single instance was there obtained any evidence of drug action, with the exception of a complaint of burning at the point of administration. The latter sensation was frequently accompanied by local redness and swelling, which lasted for several hours. Camphor injected subcutaneously in oil in doses as large as 50 grains failed to produce any definite effects. The variations in pulse and in blood-pressure occasionally following the use of the drug were so inconstant as to make it probable that they had no relation to the medication employed. The authors conclude that while camphor may be an active agent in certain disorders in which there is an abnormally small glycuronic acid content and while experiments indicate that the drug exercises a favorable effect on the heart muscle which is poisoned by chloral, muscarin, or strychnin, nevertheless camphor should neither be relied on as a cardiac stimulant nor feared as a toxic agent in the doses employed by them and under the conditions in which its action was studied.

Annals of Surgery, Philadelphia

February, LVII, No. 2, pp. 145-304

12 *Approach to Hypophysis Through Anterior Cranial Fossa. C. H. Frazier, Philadelphia.
13 *Postoperative Thrombophlebitis. A. C. Burnham, New York.
14 Multiple Myelomata, with Numerous Spontaneous Fractures and Albumosuria. E. W. H. Groves, Bristol, England.
15 Tuberculosis of Breast. C. A. Powers, Denver.
16 *Angulation of Junction of Hepatic and Common Ducts After Cholecystostomy, Simulating Common Duct Obstruction. D. Stetten, New York.
17 Strangulated Inguinal Hernia in Early Infancy. A. N. Collins, Duluth, Minn.
18 Hernia Adiposa. L. Friedman, New York.
19 Formation of Artificial Vagina by Intestinal Transplantation. F. T. Stewart, Philadelphia.
20 Reduction of Old Unreduced Dislocations of Shoulder. T. T. Thomas, Philadelphia.
21 *Chronic (Non-Suppurative) Hemorrhagic Osteomyelitis. G. Barrie, New York.

12. **Approach to Hypophysis.**—Frazier's operation consists essentially in the reflection of an osteoplastic flap from the right frontal region, in the removal *en bloc* of the supra-orbital ridge as suggested by McArthur, with a portion of the roof of the orbit, later to be replaced, and in rongeuring away what remains of the roof of the orbit down to the optic foramen. With the elevation of the frontal lobe and the depression of the orbital contents, a free and adequate exposure is secured, and there remains only to make a short incision in the dura to lay bare the cavity of the sella turcica.

13. **Postoperative Thrombophlebitis.**—Burnham analyzed ninety-eight cases of post-operative thrombophlebitis (excluding those cases due to evident direct extension from contiguous inflammatory areas) in a total of 11,655 operations. Of these ninety-eight cases, ninety-four occurred in one or both legs and are the only ones in which a detailed study is made. He believes that post-operative thrombophlebitis is an infectious disease, a definite entity in some way connected with the absorption of material from the wound. It is preceded by a slowing of the blood-stream, and by local and general disease of the vessel walls. It occurs at an earlier date in "clean" cases than in drainage cases. Rest in bed seems to be the only therapeutic measure capable of exerting any marked influence on the severity and course of the disease. Ichthyol seems to have a direct and constant influence on the local pain. Internal medication deserves a more thorough trial than it has had previously.

16. **Angulation Simulating Duct Obstruction.**—An epicritical review of this case leads Stetten to the following conclusions: After a simple cholecystostomy done in the most approved fashion on a comparatively normal gall-bladder, which was not in the least retracted and which was fixed to the peritoneum of the abdominal wall without the slightest tension, a symptom-complex develops which most strongly suggests the presence of a stone in the common duct. On relaparotomy no stone is found, but it is seen that an angulation has developed at the junction of the hepaticus and choledochus. At the angulation a valve has formed so that the flow of bile into the intestine is almost impossible. Hence the pain and jaundice when the biliary fistula was closed and the tendency to persistence of the fistula after it was reopened. Though there was no tension originally when the gall-bladder was fixed to the abdominal wall, there must have been a decided contraction of that organ after the first operation. This contraction, probably aided by the pull of the respiratory movements, resulted in the angulation. The condition was promptly cured by cholecystectomy, which permitted the angle at the junction of the ducts to straighten out.

21. **Chronic Hemorrhagic Osteomyelitis.**—The lesions in the ends of the long bones described as medullary giant-cell sarcoma, myelogenous giant-cell sarcoma, myeloma, and giant-cell tumor, Barrie does not include in the classification of tumors. The process begins as the result of a trauma, and gives all the clinical and pathologic evidence pertaining to a low-grade inflammation. The foundation on which the diagnosis of malignant tumor growth has been based is the presence in the tissues examined under the microscope of numerous giant cells which do not show any uniformity of architectural arrangement of boundary zones. It is an established fact that these giant cells are not tissue-builders, but scavengers, whose function is the removal of debris that is produced by low-grade inflammatory conditions occurring in bone. The whole process is explained on the basis of the lesion being due to a low-grade, ever-present irritation or inflammation, which causes excessive production of vascular granulation tissue masses. From the clinical picture and the gross and microscopic pathology which the condition presents, the term chronic (non-suppurative) hemorrhagic osteomyelitis seems a more correct definition of the lesion than the terms now in use.

Boston Medical and Surgical Journal

February 6, CLXVIII, No. 6, pp. 185-220

22 Some Functions of Free Dispensary. W. S. Thayer, Baltimore.
23 Treatment and Prevention of Obstinate Perineal Fistulas Following Operation for Stricture of Urethra. H. A. Lothrop, Boston.
24 *Circumscribed Epidemic of Diphtheria. H. M. Adler, Boston.
25 Tuberculosis and Public Health in South Africa. J. A. Honeij, Boston.
26 Nature of Feeling of Unreality. J. W. Courtney, Boston.

24. **Circumscribed Epidemic of Diphtheria.**—A female patient was admitted to the Danvers State Hospital in a stuporous condition. The patient was restless, got out of bed frequently to wander about, occasionally would scream. Temperature normal. Physically nothing unusual was noted, and a provisional diagnosis of dementia praecox, katatonic form, was made. Patient continued restless, delirious and unconscious. Temperature was taken once or twice more during the following few days and was found to be not over 99. On account of her disturbed condition, she was removed from a bed in the main ward to a bed in the annex for two days and one night. Then she was put back in the first bed where she died seven days after admission. A post-mortem examination was made. The pathologic findings consisted of an acute adhesive pleuritis on the right side, an acute bronchitis, a thin gray membrane on the tonsils, and a small necrotic membranous patch on the laryngeal surface of the epiglottis. A smear from the latter showed slender bacilli with deeply staining ends. The culture from the same showed a typical Klebs-Loeffler bacillus, which was injected into two guinea-pigs, resulting in their death within twenty-four hours. A typical pure culture of Klebs-Loeffler bacillus was obtained from the guinea-pigs after death.

Two nurses contracted the disease and throat cultures were positive in eight cases. Although it is not improbable that the patient who introduced the Klebs-Loeffler bacillus into the ward, died of the effects of the same, Adler believes it would be hardly fair to state that she suffered from diphtheria. Just what the relation between this infection and her psychosis was, he does not say. With the known affinity of diphtheria toxin for the nervous system, he believes, it is likely that some connection existed.

Journal-Lancet, Minneapolis, Minn.

February 1, XXXIII, No. 3, pp. 65-95

27 New Public Health and Tuberculosis. H. W. Hill, Minneapolis.

Journal of Biological Chemistry, Baltimore

February, XIV, No. 1, pp. 1-52

28 Researches on Purins. C. O. Johns, New Haven, Conn.
29 Creatin Content of Muscle Under Normal Conditions; Its Relation to Urinary Creatinin. V. C. Myers and M. S. Fine, New York.
30 *New Method for Drying Tissues and Fluids. J. Rosenbloom, Pittsburgh.
31 Protein Metabolism from Standpoint of Blood and Tissue Analysis. O. Folin and W. Denis, Boston.
32 Chemistry of Gluconeogenesis. A. I. Ringer, Philadelphia.

30. **Method for Drying Tissues and Fluids.**—The method described by Rosenbloom is based on the reaction between calcium carbid and water:

$$CaC_2 + H_2O = C_2H_2CaO$$
$$CaO + H_2O = Ca(OH)_2$$

and is said to have many advantages, especially when drying tissues preliminary to the extraction of the contained lipins. Most of the water undergoes reaction with the carbid to form acetylene, the mass of material being much less on that account than when using calcium sulphate or sodium sulphate, because the water is taken up by these salts to form the hydrated salt and the water still remains in the material. Also the calcium oxid formed in the reaction is a dehydrating agent and facilitates the drying. Another advantage in the calcium carbid method is said to be that on account of the hardness of the carbid it is unnecessary to add sand in the mixing and grinding of the material. Also after the substance is dried, on treatment with any of the lipin solvents it takes on a granular form, thereby giving the solvent the best chance of reaching the soluble lipins enclosed in the large amount of insoluble substance making up the tissue. Owing to the fact that the reaction between calcium carbid and water is markedly exothermic, it is possible that the heat developed might decompose certain of the constituents. This can be minimized by adding the carbid in small amounts to the material to be dried, contained in a porcelain dish packed in ice. When using the carbid for drying fluids, one simply adds the carbid in lumps until the material has lost its liquid form; then the powdered carbid is added till the drying is complete. The same method is used for tissues, with the addition of thoroughly mixing the carbid by grinding just as in the other methods. On account of the fact that acetylene is explosive and poisonous, Rosenbloom warns that it is wise to carry out the drying under a hood, free from flames.

Journal of Experimental Medicine, New York

February, XVII, No. 2, pp. 117-230

33 *Anaphylatoxins and Endotoxins of Typhoid Bacillus. H. Zinsser, San Francisco.
34 *Organic Matter in Expired Breath, with Special Reference to Its Inhibiting Power on Oxidizing Ferments. H. L. Amoss, Boston.
35 *Comparison of Action of Plasma and Serum on Certain Objects Used in Biological Test for Epinephrin. G. N. Stewart and T. F. Zucker, Cleveland.
36 Action of Hydrocele Fluid and Certain Other Pathologic Liquids on Some of Objects Used in Biologic Tests for Epinephrin. G. N. Stewart and T. F. Zucker, Cleveland.
37 *Degeneration and Regeneration of Axis Cylinders in Vitro. R. Ingebrigtsen, New York.
38 *Intestinal Obstruction in Rabbit. C. H. Bunting and A. P. Jones, Madison, Wis.
39 Intestinal Absorption in Infantilism. F. H. McCrudden and H. L. Fales, New York.
40 Cause of Failure to Develop in Infantilism. F. H. McCrudden and H. L. Fales, New York.
41 *Rôle of Lipoids, and Particularly Lecithin, in Narcosis. B. Kramer, New York.
42 Variations in Chicken Sarcoma Caused by Filterable Agent. P. Rous and James B. Murphy, New York.
43 *Demonstration of Treponema Pallidum in Brain in Cases of General Paralysis. H. Noguchi and J. W. Moore, New York.

33. **Anaphylatoxins and Endotoxins of Typhoid Bacillus.**—The experiments recorded by Zinsser confirm the observations of Friedberger that acutely toxic bodies can be produced from typhoid bacilli by the action of sensitizer and complement, and that, when small quantities of bacteria are used, an excess of sensitization either interferes with the formation of the poisons or leads to a cleavage of the bacterial proteid beyond the poisonous intermediate products spoken of as anaphylatoxins. Unlike the experience of other workers with poisons of this nature, however, these experiments have shown that the action of complement on typhoid bacilli strongly sensitized or not at all sensitized may be carried on at body temperature for considerably longer than twelve hours without leading to a destruction of the poisons, and that this is true when the quantities of the bacteria used vary within the wide range of from one to twelve agar slants. It has been found, in fact, that in the case of this micro-organism prolonged exposure at the higher temperature of considerable quantities of bacteria constitutes an unfailing method of regularly obtaining powerful poisons. The results obtained by the use of smaller quantities and the less vigorous complement action at low temperatures are far less regular or satisfactory. It would appear from this that complement action of considerable vigor is required to obtain from this bacillus any appreciable yield of anaphylatoxin and that the poison, once formed, is not as unstable as that found in other micro-organisms by others.

34. **Organic Matter in Expired Breath.**—The experiments recorded by Amoss show that a variable amount of matter is retained by weak hydrochloric solution when exhaled breath is passed through it, and that this matter is volatile on ignition. Contrary to the findings of Weichardt, there is no charring or blackening. Nesslerization shows the residue to consist mainly, if not wholly, of ammonium chlorid. This ammonia is believed to have come from the decomposition of food particles about the teeth. Weichardt's experiments on the inhibition of the guaiacum test for blood by means of the substances retained when exhaled breath is passed through hydrochloric acid or over calcium chlorid crystals are not corroborated. It is further shown that the guaiacum indicator is unreliable for these tests in view of the fact that a small amount of free acid or free alkali will inhibit the guaiacum test for blood. This fact is offered as a probable explanation of Weichardt's results. Calcium chlorid alone gives a deep blue color with the guaiacin indicator. Weichardt used this salt to collect from the expired breath certain unknown substances which he claims inhibit the oxidation of guaiacum by blood. His results are therefore inconclusive.

35. **Comparison of Action of Plasma and Serum.**—The main results which seem to follow their observations are summarized by Stewart and Zucker as follows: The substance or property, developed in shed blood by which it causes constriction of artery rings, is not developed, or at least not mainly developed, in connection with the actual change of fibrinogen to fibrin, since the constrictor action of different plasmas differs greatly, while the absence of coagulation is common to all. The development of the constrictor substance, or property, is associated with changes undergone probably by formed elements of the blood when it is shed. These changes may be identical with the alterations, or with some of the alterations, preliminary to clotting. It is possible, however, that there may be changes connected with the development of the pressor property which, although concomitant with the liberation of the substances concerned in the production of thrombin, are yet quite independent of the clotting process. The authors' observations do not enable them to decide definitely between these possibilities. The constrictor substance, or property, developed in shed blood acts especially on blood-vessels and does not equally affect the

other organs examined. This follows from the fact that a plasma and serum which differ markedly in their action on the blood-vessels may have practically the same action on the intestine or uterus segments, an action which must therefore reside mainly, at least, in the original plasma itself. The indication that the serum acts especially on blood-vessels increases the interest of the suggestion that this action may play an important part in the prompt sealing of wounded vessels in addition to the mechanical effect of the clot, or by coming into operation before the clot has fully formed.

37. **Degeneration and Regeneration of Axones in Vitro.**—Ingebrigtsen found that the brains of chick embryos, of cats six weeks old, of rabbits two months old and of dogs three weeks old, when cultivated *in vitro*, develop long filaments which, according to their growth and their anatomic and tinctorial characters, must be considered as true axis cylinders. Similar structures develop from spinal ganglia of rabbits seven months old, and from the spinal cord of cats six weeks old and of rabbits two months old. When severed from their origin by section these threads undergo degenerative changes which do not appear after nine hours, but which are seen after twenty hours, and continue until in the course of the following two days the thread degenerates completely. After twenty hours the development of the new axis cylinders from the central part of the cut fibers is observed.

38. **Intestinal Obstruction in Rabbit.**—The import of the series of experiments by Bunting and Jones is to the effect that the reabsorption of a toxic secretion from the lumen of the duodenum is the important factor in causing the rapid death of rabbits after high intestinal obstruction.

41. **Lipoids and Lecithin in Narcosis.**—The intravenous injection of 5 to 30 c.c. of a 5 or 10 per cent. emulsion of lecithin, depending on the size of the animal used, according to Kramer, does not interfere with the induction of anesthesia, and this can be accomplished as readily in animals thus injected as in controls. In six out of nine experiments lecithin had no effect on the rapidity with which the various phenomena which indicate the animal's recovery from the effects of the anesthetic appeared. These experiments do not bear out Reicher's assumption as to the cause of the lipoidemia, and the explanation of this phenomenon still remains an open question.

43. **Treponema Pallidum in Brain.**—Seventy paretic brains were examined by the authors, one of whom succeeded in finding the pallidum in twelve out of the seventy specimens. The cases in which the pallida were found showed the classical physical signs. The post mortem findings in the brain in every case were definitely those of general paralysis. Ten were men and two were women. Seven were of the cerebral type, and five of the tabetic. In several instances the patients had been picked up on the street in a confused state and had no idea of the duration of the condition. In seven cases in which the onset could be satisfactorily determined, the average duration was seventeen months, the longest thirty months and the shortest five months. The majority were much below the average duration, as estimated by various authors, which varies from twenty-four to thirty-two months. It is possible, then, that we are more apt to find the spirochetes in those cases which run a fairly rapid course. The age varied from 33 to 60 years, with an average of 44 years.

Journal of Medical Research, Boston

January, XXVII, No. 3, pp. 229-389

44 Benign Epithelial Tumors of Thyroid. D. Marine, Cleveland.
45 Growth Centers of Benign Blastomata, with Special Reference to Thyroid and Prostatic Adenomata. B. T. Simpson, Freiburg.
46 Studies in Canine Distemper. J. C. Torrey and A. H. Rahe, New York.
47 Unusual Type of Arteriocapillary Fibrosis Clinically Resembling Myasthenia Gravis. H. Brooks, New York.
48 *Inhibition of Hemolysis by Serum of Cancerous Individuals. W. O. Sweek and M. S. Fleisher, St. Louis.

48. **Inhibition of Hemolysis.**—The serum from eighteen cancer cases and twelve normal individuals was tested by Sweek and Fleisher for its anti-hemolytic properties with lactic acid; eighteen cancer cases and twelve normal individuals were tested with oleic acid. In no case was any marked increase of the inhibitory power of the serum of cancerous patients evident. It therefore appears that the determination of the anti-hemolytic activity of the serum of cancerous patients cannot be used as a diagnostic method, and furthermore, there is no evidence that an increased anti-hemolytic activity exists in the serums of cancerous patients; it also appears that the anti-hemolytic property of normal individuals living under uncontrolled conditions varies within rather wide limits.

Journal of Outdoor Life, New York

February, X, No. 2, pp. 33-62

49 Foreword After Ten Years. E. L. Trudeau, Saranac Lake, N. Y.
50 Journal of Outdoor Life, an Adventure in Journalism. L. Brown, Saranac Lake, N. Y.
51 From Patient's Viewpoint: Purpose of Outdoor Life. W. S. Carpenter, New York
52 Revised Estimate of Economic Cost of Tuberculosis. I. Fisher, New Haven, Conn.

Kentucky Medical Journal, Bowling Green

February 1, XI, No. 3, pp. 89-144

53 *Present Status of Operative Treatment of Fractures of Long Bones. A. H. Barkley, Lexington.
54 Idealism in Medicine. C. Pope, Louisville.
55 Nearing the Goal. J. G. Carpenter, Stanford.
56 Diagnosis of Epilepsy. J. J. Moren, Louisville.
57 *Public Health Problem; Constructive Efforts Toward Its Solution. W. L. Heizer, Bowling Green.

53 and 57. Abstracted in THE JOURNAL, November 30, p. 1998 and 1999.

Lancet-Clinic, Cincinnati

February 1, CIX, No. 5, pp. 113-140

58 *Unmistakable Clinical Proof of Therapeutic Value of Tuberculin. F. M. Pottenger, Monrovia, Cal.
59 Arsenic in Therapy. W. F. Barclay, Pittsburgh.
60 Modern Conceptions of Paranoia. C. D. Read, Hospital, Ill.
61 *Chemical Conditions Favoring Production of So-Called "Spores" in B. Tuberculosis. W. B. Wherry, Cincinnati.
62 Induced Pneumothorax in Treatment of Pulmonary Disease. A. J. Bell, Cincinnati.

58. Abstracted in THE JOURNAL, November 9, p. 1735.

61. **Production of Spores in B. Tuberculosis.**—Bodies which in appearance resemble the spores of other bacteria, have been described in the tubercle bacillus by Nocard and Roux, Metschnikoff, Klein, Coppen-Jones and others. They have been found most frequently in preparations from old pulmonary cavities and from old cultures. They have been described as rounded bodies of greater diameter than the bacilli. From one to three or more may occur in a single rod. They stain more intensely than the rest of the body of the bacillus, becoming brown or blackish-red, and hold the dye more strongly than the bacillus when treated with nitric acid. Attempts to show that these forms have greater resistance to heat and chemicals have failed. Yet they are often pictured in text-books as the "arthrospores" of the tubercle bacillus. During the course of a study of the symbiotic growth of a saprophytic strain of *B. tuberculosis* with other bacteria, W. L. Shannon, one of Wherry's students, noted the constant occurrence of these forms when the culture was grown along with a certain strain of *B. coli*. His results explain, Wherry says, the especially frequent occurrence of the "sporulating" forms in old pulmonary cavities. The following observations go a step further and were made during a study of the growth of the same saprophytic strain of *B. tuberculosis* in synthetic mediums—containing distilled water, certain necessary salts and varying but known sources of carbon and nitrogen. Some of these experiments show that the forms above described, containing large strongly acid-proof granules, develop beautifully in mediums containing ammonium chlorid as a source of nitrogen and propyl alcohol, mannite and levulose used separately as sources of carbon. These cultures distinctly exhibit a greasy or cheesy consistence when spread on a side. Vital staining with a large number of basic aniline dyes show that the inclosed acid-proof granules have a marked affinity for many of these dyes in aqueous solution. This evidently shows that these acid-proof

granules, though they may be of a fatty or waxy nature, probably differ in composition from the protoplasm of virulent tubercle bacilli.

Although the culture used in these experiments is ordinarily only feebly acid-proof, it becomes strongly so or entirely non-acid-proof under certain methods of cultivation. Experiments are in progress to determine the value of some of these cultures in the production of immunity.

Laryngoscope, St. Louis

January, XXIII, No. 1, pp. 1-80

63 Need of a Standard in Voice Production. W. J. Henderson, New York.
64 Result of Eighteen Years of Research Work on Voice Production and Analysis. W. Hallock and F. S. Muckey, New York.
65 Standardization of Vocal Training from Teacher's Standpoint. H. H. Brown, New York.
66 Vocal Art Science from Standpoint of Use and Abuse of Voice. F. E. Miller, New York.
67 *Case of Aphthongia. F. V. Laurent, Pittsburgh.
68 Eight Years of Chloroform Anesthesia in Nose and Throat Surgery. C. P. Grayson, Philadelphia.

67. **Aphthongia.**—Aphthongia is a very rare affection, only three cases having been recorded. The first case was recorded by Panthel of Ems in 1855. Fleury defined it as cramps in the territory of the hypoglossi, which set in whenever an attempt to speak was made and which rendered articulate expression extremely difficult or impossible. The cause is great emotional excitement or fright. Laurent reports a case occurring in a girl 15 years old. When 9 years of age she fell down a flight of steps and hit her head on the pavement, and while not injured apparently, she suffered a great fright. Before this time, she had had no speech difficulty, but after this fall, on attempting to speak, the tongue would be pulled back and the lower jaw pulled downward and to the right side. This condition has lasted for six years. When Laurent first saw her she still had these symptoms and he noticed also that when she attempted to speak, the extrinsic muscles of the larynx supplied by the hypoglossal nerve (the sternothyroid and thyrohyoid) and the sternohyoid muscle fell into violent vibrating movements. This was only on the right side. Patient said she felt as though a hand was clutching her throat and pulling her tongue back and that she felt great pain when trying to speak. Now, after six months, she says it does not hurt her at all to talk, the feeling of constriction in the throat has disappeared and there is no muscular spasm, although there is still the backward traction of the tongue to a slight degree. She still has some trouble with the linguals and will have to remain in Laurent's care for further training. The treatment used was massage of the offending muscles and teaching her to remove the strain from the laryngeal muscles by "bringing the voice forward." This was done by making the attack of the initial tone with the lips closed (in which way only a pure head-tone can be produced) afterward using the head-tones with the lips just far enough apart to permit of articulation.

Medical Record, New York

February 1, LXXXIII, No. 5, pp. 185-230

69 Newer Problems and Newer Phases of Antituberculosis Warfare in United States. S. A. Knopf, New York.
70 Gastric Motor Functions. C. S. Fischer, New York.
71 Hygiene for Normal Child. I. S. Wile, New York.
72 Clinical Examination of Feces. A. F. R. Andresen, Brooklyn.

February 8, LXXXIII, No. 6, pp. 231-276

73 General Anesthesia by Intravenous Route. W. F. Honan and J. W. Hassler, New York.
74 *Preliminary Report of Operations Under Extradural Anesthesia. J. M. Lynch, New York.
75 Experimental Psychology and Medicine. H. L. Hollingworth, New York.
76 Treatment of Benign Papillomata of Urinary Bladder with Oudin High-Frequency Current Introduced Through Catheterizing Cystoscope. E. Beer, New York.
77 Literary Genius and Manic-Depressive Insanity. E. C. Reid, Washington, D. C.
78 *New Chemistry and New Materia Medica. H. Hille, Chicago.
79 Neglect of Oral Treatment in Infectious Diseases. C. E. Field, New York.

74. **Operations Under Extradural Anesthesia.**—The method described by Lynch is said to be absolutely free from danger; it insures a perfect anesthesia, prevents shock, and allows of any surgical procedure below the culdesac of Douglas. It can be used in any of the following procedures: cystoscopy and operations on the urethra, prostate, perineum, rectum, and lower extremities. The safest method to adopt, especially by those who are not familiar with this procedure, Lynch says, is to make an incision a little in front of the sacrococcygeal joint, and if necessary extend it until an opening is found. This can be done under local anesthesia.

The point at which the needle is to be inserted is first decided on. This can be determined by following the sacral spinus processes until they are found lacking. Slightly above this point will be found the opening of the canal. If, as happens in most cases, there is a bifid spine, the ridges can easily be felt, except in very fat subjects. If the canal opens near the sacrococcygeal joint this point is selected. Then, having first determined the point at which the needle is to be inserted, and this is always in the median line, it is painted with tincture of iodin. Next, a little ethyl chlorid is sprayed on the skin and a hypodermic syringe, containing a solution of 1-500 cocain, with an ordinary hypodermic needle, is next employed in order to anesthetize the skin over the area in which the needle is to be inserted, so that a small incision can be made without causing any pain. It is always better to incise the skin in order to obviate any chance of infection.

The following procedure is used in passing the needle. The needle is grasped in the right hand, and the index finger placed close to the point. It is then passed at an angle of about 15 degrees until the bone is reached. The needle is then passed close to the bone until it has been entirely inserted for about one inch. When the needle is found to be in the canal about 4 c.c. of the same solution is deposited on each side. This is usually sufficient. After this has been done the trocar is reinserted in order to prevent the escape of fluid, and the needle, with the trocar, allowed to remain in position until anesthesia is established. The reason for this is because if the anesthesia is not established after fifteen minutes it may be necessary to inject 1 or 2 c.c. more, and this is made much simpler if the needle has been left in place. It is important for the fluid to be absolutely sterile and freshly prepared; also of the same specific gravity as the blood in order that it may be absorbed readily.

After anesthesia has been established the needle is withdrawn, and some cotton and collodion placed over the wound. The patient is then placed in whatever position is desirable in order to perform the operation, and the rest of the procedure depends on what particular operation has been undertaken.

78. **New Chemistry and New Materia Medica.**—Hille summarizes his paper as follows: 1. Inorganic matter and organic material are the same in essence but different in form and structure. 2. The inorganic world is crystalline. The organic world is colloidal. 3. The inorganic is coarse in particle and slow in vibratory activity. The organic is fine in particle and rapid in vibratory activity. 4. Mineral bodies, in organic form, are an essential constituent of food and of the animal organism, and are of vital importance in the prevention as well as the cure of disease. 5. Crystalline, or inorganic, minerals are not fit to serve as food or remedies for the animal organism. They will, therefore, eventually be eliminated from materia medica and replaced by vitochemical, or true organic, minerals. 6. The smaller the particles of a colloidal mineral, and the higher their rate of vibration, the better is it assimilated and adapted as a remedy. 7. Many of the so-called "organic" salts are not organic in the true sense because all, or part, of the compound is still crystalline and not colloidal. 8. The old chemistry, whose days are numbered, is unable to differentiate between inorganic and organic. 9. The new chemistry has not only made clear the difference between inorganic and organic, but also sheds its light on a problem which in the old chemistry was one of the most profound mysteries, viz., Nature's evolutionary principle.

Mississippi Medical Monthly, Vicksburg

February, XVII, No. 10, pp. 191-209

80 Cause and Prevention of Typhoid from Public Health Viewpoint. J. T. Longino, Jonestown.
81 General Anesthesia. H. H. West, Gulfport.

New Orleans Medical and Surgical Journal

February, LXV, No. 8, pp. 559-634

82 Medical Interest in Canal Zone. O. Joachim, New Orleans.
83 Neurologic Case Demonstrating Associated Movements of Upper Extremities. E. W. Phillips, U. S. Navy.
84 Case of Acute Nephritis, with Uremia, Following Salvarsan. P. J. Kahle, New Orleans.
85 Developmental Defects of Female Genitalia; Report of Five Cases. H. W. Kostmayer and M. J. Gelpi, New Orleans.
86 Management of Normal Labor. A. C. King, New Orleans.
87 Comparative Value of Abdominal and Vaginal Examination in Diagnosis of Fetal Presentation and Position. W. D. Phillips, New Orleans.
88 Interstitial Pregnancy. W. Kohlmann, New Orleans.
89 Surgical Treatment of Puerperal Infection. C. J. Miller, New Orleans.
90 Conservatism in Gynecologic Surgery. M. A. Shlenker, New Orleans.
91 Rôle of Roentgen-Ray in Progressive Medicine. A. Henriques, New Orleans.

New York Medical Journal

February 8, XCVII, No. 6, pp. 269-320

92 *Double Function of Fats and Carbohydrates in Nutrition and Their Different Nutritive Properties. H. D. Chapin, New York.
93 Relation of Scoliosis to School Seating. J. W. Sever, Boston.
94 Prostitution in Japan. D. C. McMurtrie, New York.
95 Physical Therapeutics from Modern Point of View. W. B. Snow, New York.
96 High-Frequency Currents in Medicine. F. de Kraft, New York.
97 Mouth from Diagnostic Standpoint. M. Manges, New York.
98 Ocular Headache. A. Brav, Philadelphia.
99 Medical Inspection of Schools. J. F. Edwards, Pittsburgh.
100 Chronic Ulcers of Leg. W. Brady, Elmira, N. Y.
101 Gastric Symptoms in Incipient Tuberculosis. M. M. Jacob, Philadelphia.

92. **Fats and Carbohydrates.**—Fats and carbohydrates, Chapin says, serve two distinct purposes in nutrition which are equally important: They furnish energy which, when expended, liberates heat, and they also supply water to the cells in such a manner that it dilutes the cell contents and reduces their osmotic pressure so as to produce an automatic flow of nutriment to them from the more concentrated blood as soon as it is needed. Fats are more effective producers of metabolic water than carbohydrates. Metabolic water produced from fats weighs more than the original fat and results from a combination of the hydrogen of the fat with oxygen from the blood. Metabolic water derived from carbohydrates is a residual product obtained by splitting the carbohydrate, and weighs about two-thirds as much as the original carbohydrate. In milk, the natural food of rapidly growing young animals, which require much metabolic water to promote cell nutrition, fat supplies the greater part of the metabolic water. In hen's eggs it supplies practically all of it. The amount of heat or the number of calories excreted is a measure of the food that is being burned, but does not show how much is needed for growth. The energy or caloric need of the body does not depend upon its size or weight, but upon its activity. The number of calories a food will yield is not an indication of its nutritive value. The caloric requirements of the body to maintain it intact depend on the amount of energy expended. The number of calories the food, which is to supply these requirements should yield, depends on its caloric value after deducting the number of calories needed for its digestion and assimilation. The amount of energy needed for digesting a food depends largely on its physical condition.

Washington (D. C.) Medical Annals

January, XII, No. 1, pp. 1-72

102 Medical Sectarianism. J. B. Nichols, Washington, D. C.
103 Three Cases of Xeroderma Pigmentosum. C. A. Simpson, Washington, D. C.
104 Management of Juvenile Psychasthenia, with Cases to Illustrate Successful Treatment. T. A. Williams, Washington, D. C.

Wisconsin Medical Journal, Milwaukee

January, XI, No. 8, pp. 239-272

105 Simplification of Some Diets. S. Strouse, Chicago.
106 Public Housekeeping with Reference to Sanitation. J. Riddle, Oshkosh.
107 Plan for Medical Inspection of Country Schools. R. H. Kinney, Lancaster.
108 Treatment of Fractures. V. F. Marshall, Appleton.
109 Case of Epithelioma of Lip Complicated by Xanthoma Tuberosum Multiplex. A. Drexel, Milwaukee.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Australasian Medical Gazette, Sydney

December 14, XXXII, No. 24, pp. 599-622

1 Treatment of Epilepsy by Chloretone. B. J. Bentley.
2 Fresh Bread vs. Stale. J. Jamieson.
3 Treatment of Spastic Paralysis. M. Herz.

December 21, XXXII, No. 25, pp. 623-646

4 Malignant Growth of Large Intestine. G. H. Abbott.
5 Pseudochylous Ascites. J. B. Nash.

December 28, XXXII, No. 26, pp. 647-670

6 Tuberculous Rheumatism. F. G. Griffiths.
7 One Hundred and Fifty Consecutive Cases of Cataract Extraction. E. T. Smith.
8 Case of Exostosis of Femur. G. H. Abbott.

Brain, London

November, XXXV, No. 2, pp. 61-193

9 Growth and Survival Period of Intracranial Tumors, Based on Records of 500 Cases, with Special Reference to Pathology of Gliomata. H. H. Tooth.
10 *Paths of Encephalic Infection in Otitis. C. Tylor.
11 *Some Rarer Manifestations of Parasyphilis of Nervous System. A. R. Wilson.

10. **Paths of Encephalic Infection in Otitis.**—The possible pathways of infection in the various intracranial complications secondary to infective otitis media are discussed by Tylor. Infection through vascular channels appears to be responsible for most cases of lateral sinus thrombosis, while vascular infection is a cause of extradural and brain abscesses in a large number of cases. Many cases of extradural abscess are due to disease of the petrous bone, especially its posterior surface and tegmen; in those cases in which the bone is unaffected, the dura mater becomes infected through a septic endophlebitis of a vein of the tympanic mucosa extending to a vein of the dura. Cerebral and cerebellar abscesses may be due to direct contact of the brain with diseased dura mater; if perforation of the latter takes place, direct extension to the cerebral surface may occur; if no perforation occurs, the disease may spread to the brain by infection of the veins in the dura, with extension from them to the vessels of the pia-arachnoid, and from the latter to the interior of the brain. Cerebellar abscess is also often secondary to infective labyrinthitis, extension of the disease taking place along the nerve-sheaths, or directly in the region of the posterior semicircular canal. Leptomeningitis is either (a) secondary to a gross intracranial lesion or bone disease, in which case it is due to the rupture of an abscess into the intradural space or to vascular infection from the lateral sinus, abscess, or bone, as the case may be; or (b) to labyrinthitis, with infection spreading along the nerve-sheaths, or vascular infection from the middle ear direct.

The results of this investigation show that infection of the labyrinth is responsible for many cases of cerebellar abscess and meningitis of otitic origin. Formerly, disease of the labyrinth, owing to lack of knowledge as to its pathology, did not receive sufficient attention as a cause of intracranial infection. Of recent years, however, our knowledge of the diseases affecting it, and their bearing on the subject of encephalic infection, has increased rapidly. At the present time, surgeons when operating for disease of the middle ear pay more attention to fistulas or necrosis of its inner wall as evidence of possible labyrinthine involvement. Moreover, various clinical tests which have been introduced lately, such as the rotation tests and the caloric and galvanic reactions, when taken together, appear to afford a fairly sure means of diagnosing this condition. In this way many cases of labyrinthine infection are discovered which in earlier years would almost certainly have been overlooked. Many cases of tuberculous and non-tuberculous cerebrospinal meningitis occur in patients with infective ear-disease in which the latter is not the obvious cause of the meningitis, and the question as to whether the ear can be regarded as being the channel of infection in such cases requires to be further investigated.

11. **Parasyphilis of Nervous System.**—There is no doubt in Wilson's mind that in the vast majority of cases of tabes and general paralysis of the insane syphilis is the essential cause.

Journal of Tropical Medicine and Hygiene, London

January 15, XVI, No. 2, pp. 17-32

24 Disease in Madagascar. C. J. A. Moss.

Lancet, London

January 25, I, No. 4665, pp. 217-296

25 Treatment of Inoperable Cancer. A. P. Gould.
26 *Etiology of Endemic Goiter. R. McCarrison.
27 Treatment of Meningitis of Otitic Origin. W. Milligan.
28 Case of Adenomyoma Uteri. J. B. Hellier.
29 Hypertrophic Stenosis of Pylorus in Adults. H. G. Barling.
30 Malaria in India and Birth- and Death-Rate. W. H. Kenrick.
31 *Pathogenicity and Virulence of Bacteria. F. H. Thiele and D. Embleton.
32 Jugular Pulse. H. W. Verdon.
33 Case of Hair Cast of Stomach; Gastrotomy; Recovery. L. Storey.

26. **Etiology of Endemic Goiter.**—McCarrison reiterates his belief, based on experiments that thyroid enlargement can be experimentally produced in man within a few weeks by the administration of the suspended matter separated by filtration from goiter-producing waters. It cannot be so produced when the suspended matter is boiled. The goiter produced in this way must almost certainly be due, not to the mineral, but to the living component of the suspended matter. While it cannot be said to be definitely proved by these experiments that filtration through a Berkefeld filter wholly deprives the water of its goiter-producing properties, water so treated does not appear to be capable of causing goiter in man within a period of fifty-five days. The results of McCarrison's experiments and observations indicate that the living excitant of goiter exists in greatest abundance in the deposit at the bottom and sides of water-channels, tanks, wells and other receptacles of goiter-producing water.

The characteristics exhibited by experimentally produced goiter in men are: (1) It usually appears about the fifteenth day of the experiment. (2) It shows a marked tendency to fluctuate in size. (3) It reaches its point of maximum size between the twenty-fifth and thirtieth day of the experiment. (4) The enlargement of the gland is not great, nor is it progressive under the conditions of the experiment. (5) It is accompanied, as a rule, with certain subjective symptoms of throbbing in the neck and feelings of fulness and discomfort. (6) It may completely disappear under the conditions of the experiment. The cumulative evidence of experiments, together with other facts and observations is, to McCarrison's mind, conclusive proof of the proposition which he now lays down, that soil is also a vehicle of the *contagium vivum* of goiter.

31. **Pathogenicity of Bacteria.**—The authors point out that ferments form an important normal mechanism of defense against bacterial invasion. The ferments performing this important function are: (a) the normal panenzyme, (b) the slightly differentiated specific enzyme, (c) the thermolabile specific coenzyme or amboceptor and (d) the thermostable specific coenzyme or amboceptor. These last two adjuvant and accelerate the action of the ordinary enzyme. The action of the ferment is to bring about proteolytic digestion of the bacteria. Exotoxins and endotoxins are bacterial protoplasm and are not primarily toxic *per se*, but only become so when acted on by the ferments. The action of the ferments on the bacterial protoplasm is to produce toxic early proteolytic digestion bodies. These bodies, besides being toxic to the animal, are also aggressive in the sense of Bail—i. e., are antiphagocytic. The action of this toxic substance, besides being aggressive, is to produce (a) in large amounts, death; (b) in lesser amounts, fall of temperature; and (c) in small amounts, fever. This substance is the cause of death in all bacterial infections. The virulence of a bacterium is dependent on the power of exuding around itself a zone of its cytoplasm, which remains in position and acts as a protective shield. The production of a zone of ferment equilibrium in this shield protects the bacterium itself from the penetration of the ferment. The shield thus acted on is also aggressive to phagocytosis. Pathogenicity is due to (a) the virulence of the bacterium, and (b) the relative activity of the ferment to the bacterium. Thus they would say that immunity is due to ferment action and phagocytosis—i. e., it is cellulo-humoral.

Medical Press and Circular, London

January 1, XCV, No. 3843, pp. 1-26

34 True and False Gastric Dyspepsias. A. Cawadias.
35 Neurology of Visual System. (To be continued). H. Campbell.
36 Some Specific Methods of Treating Tuberculosis of Lungs. W. M. Crofton.
37 Chalazion. J. Doulai.

January 8, XCV, No. 3844, pp. 27-54

38 Teeth in Relation to Pulmonary Tuberculosis. G. Thomson.
39 Neurology of Visual System. (To be continued). H. Campbell.
40 Clinical Interpretation of Results of Urinary Analysis. M. Labbe.
41 Still-Births in Relation to Infantile Mortality. R. Dudfield.

January 15, XCV, No. 3845, pp. 55-82

42 Cancer of Liver or Pancreas. W. H. White.
43 *Female Sterility as Salient Feature of General Tuberculosis of Peritoneum. E. H. Tweedy.
44 Neurology of Visual System. (Concluded). H. Campbell.
45 Fixation Abscess. L. De Savarel.

January 22, XCV, No. 3846, pp. 83-108

46 Treatment of Facial Neuralgia and Facial Hemispasm. M. J. Sicard.
47 Differential Diagnosis of Swelling in Breast. C. A. Morton.
48 Considerations of Bismuth Meal. H. A. S. Newton.
49 Catha Edulis (Abyssinian Tea). J. C. McWalter.

43. Also published in *Journal of Obstetrics and Gynecology*, January, 1913.

Archives des Maladies du Cœur, etc., Paris

January, VI, No. 1, pp. 1-80

50 Roentgenography of Adhesion of the Pericardium. (Etude radiologique de la symphyse cardiaque et des adhérences partielles du péricarde.) H. Vaquez and E. Bordet.
57 Anemia of Pernicious Type in the Tuberculous. (Anémie hémolysinique du type pernicieux avec hémosidérose viscérale chez un tuberculeux.) G. Roque, J. Chalier and L. Nové Josserand.
52 Tuberculosis as a Factor in Myeloid Leukemia. (Rôle de la tuberculose dans l'étiologie de la leucémie myéloïde.) A. Nanta.

Bulletin de l'Académie de Médecine, Paris

January 7, LXXVII, No. 1, pp. 1-18

53 Carrel's Work on Organs Living Outside of Organism. (Vie autonome d'appareils viscéraux séparés de l'organisme d'après les nouvelles expériences de M. Alexis Carrel.) S. Pozzi.

Bulletins de la Société de Pédiatrie, Paris

December, XIV, No. 9, pp. 477-520

54 *Scarlatinal Uremia with Blindness. (Encéphalopathie scarlatineuse. Début par amaurose. Réaction méningée toxique.) H. Méry, H. Salin and A. Wilborts.
55 *Pulmonary Complications of Scarlet Fever. R. Porak.
56 *Bottle Exercise for the Lungs. (Nouvelle méthode d'exercices respiratoires progressifs, procédé de la bouteille.) J. Pescher.

54. **Scarlatinal Uremia.**—A case is reported in which a child of 7 twenty-two days after the onset of scarlet fever of the ordinary type developed extremely severe headache, with a little vomiting and diarrhea, and amaurosis. Lumbar puncture showed the spinal fluid under high pressure but limpid, with slight lymphocytosis and considerable albumin, and a slight increase in the urea content. Venesection and lumbar puncture were done twice and improvement rapidly followed. By the sixth day the urine was free from albumin, and lumbar puncture showed the fluid normal and the child seemed to have entirely recovered. Notwithstanding the insignificance of the albuminuria and its brief duration and the absence of anasarca and disturbances on the part of the heart, the diagnosis of scarlatinal uremia seems beyond question—a toxic reaction on the part of the meninges. The case resembles the thirteen reported by Rilliet and one previously observed by Méry although in the latter case the cerebral accidents progressively increased, the child dying in convulsions in a few hours after the first symptoms. They had developed at the end of the first week of an ordinary scarlet fever.

55. **Pulmonary Complications in Scarlet Fever.**—In the first case reported by Porak the scarlet fever developed two weeks after varicella with a tendency to hemophilia. During convalescence from the scarlet fever occurred bronchopneumonia with multiple abscesses in the lung and pyopneumothorax. In the second case there was an infarct in the lung from arterial thrombosis of streptococcal origin. The necropsy findings in each case are given.

56. Summarized in the Paris Letter, February 8, p. 459.

They are parasyphilitic nervous diseases. There is evidence that at all events some cases of primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy, are parasyphilitic too. A history of syphilis or a positive Wassermann reaction, and in some instances the post-mortem examination, point to this being so. In tabes and general paralysis there is degeneration of certain neuronic tracts or groups; and degeneration of precisely the same character in other neuronic groups produces primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy. Combinations of all three with tabes or general paralysis of the insane, or with both, or among themselves, are so frequent that it is difficult to withstand the conclusion that their essential etiologic factor is the same, more especially since it is conceded that syphilis has a great affinity for the nervous system. If it be allowed that the neuronic degeneration of primary optic atrophy, primary lateral sclerosis or progressive muscular atrophy when combined with that of tabes or general paralysis is due to syphilis, it cannot be denied that such degeneration, occurring uncombined, may still be parasyphilitic. The Argyll Robertson pupil is recognized as a symptom of tabes and general syphilis; in other words it is a parasyphilitic manifestation. It is found also with primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy. If the question of antecedent syphilis were carefully investigated in every case of primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy, or better still if every case were subjected to Wassermann's test as well, Wilson believes that an accumulation of evidence, entirely analogous to that obtained in determining the etiology of tabes and general paralysis, would soon be at hand, and that these three diseases would take their rightful place among the rarer manifestations of parasyphilis of the nervous system.

British Medical Journal, London

January 25, I, No. 2712, pp. 149-204

12 *Work Carried Out at Radium Institute from Aug. 14, 1911, to Dec. 31, 1912. A. E. H. Pinch.
13 Report of Chemico-Physical Laboratory. W. L. S. Alton.
14 Diagnosis and Treatment of Cancer of Rectum. W. E. Miles.

12. **Therapeutics of Radium.**—This is the first report of Mr. Hayward Pinch, the Medical Superintendent of the Radium Institute, founded in London in 1911, at the suggestion of King Edward VII, and through the munificence of Sir Ernest Cassel and Viscount Iveagh. Sir Frederick Treves is chairman of the executive committee of the institute. No examples of malignant disease, with the single exception of rodent ulcer, have been treated unless operation has been declared to be unjustified or the patient has absolutely refused operation. The total number of patients suffering from epithelioma who applied for treatment at the institute was 147; of these, thirteen were not treated; in eight the treatment was commenced so recently that no opinion on its result can be stated, and in fifteen the application of radium was prophylactic only. This was undertaken, although it was abandoned by twenty-three patients. Of the eighty-eight cases that remain if these be deducted, twenty are not improved and twenty-two are dead; if to them, on the assumption that the abandonment was due to the patients' disappointment with the result, are added the cases in which the treatment was abandoned, there is a total of sixty-five failures, or nearly three-fifths. There were seven cases in which the patient was apparently cured and thirty-nine in which there was improvement—a total of forty-six, or about two-fifths.

In cancer of the breast the treatment failed in thirty-eight cases and was attended with more or less success in thirty-five, and in cancer of the rectum it failed in twenty-seven cases, or about three-fourths, and succeeded in ten, or rather over one-fourth. The report is quite definite in advising that radium should never be used in cancer of the breast as a substitute for operation and the same is true of cancer of the rectum. It seems established, however, that, in inoperable cases of cancer of the breast, radium is often able to relieve pain and promote secondary deposits; in a few instances superficial carcinomatous nodules and enlarged glands disappeared, and reports are given of several such cases in which the results were very remarkable.

In cancer of the uterus the immediate results reported are so satisfactory that it would appear well worth while to submit any patient with inoperable disease to the radium treatment. It has been applied by introducing into the cervical canal a tube containing radium for periods of thirty to sixty hours spread over five or ten days. In a considerable proportion of cases hemorrhage is arrested, discharge diminished and rendered inoffensive, ulceration healed, pain relieved, and the growth even in some cases stopped. Out of thirty-nine patients treated, three were apparently cured, while nineteen were improved, but the report points out that the action is only local, that in most cases dissemination will occur.

The evidence as to rodent ulcer seems to justify the conclusion that the best advice which can be given to a patient with rodent ulcer of the skin is to resort at once to treatment by radium. It has been found that if the lesion has been treated for prolonged periods by the Roentgen-rays, zinc ionization and carbonic acid snow, the healed tissue frequently breaks down after radium and repair is slow and imperfect. A small rodent ulcer limited to the skin and not previously treated may be cured by a single exposure, probably because it is safe to use a full-strength applicator unscreened. With a large ulcer it is necessary to proceed more cautiously, as an unscreened application to the whole area will produce severe systemic disturbance. Different parts of the surface are therefore treated at intervals of three or four weeks. If the disease has attacked bone or cartilage, still more caution is requisite to avoid the risk of acute painful and prolonged inflammation. Rodent ulcer of a mucous membrane is refractory to treatment by radium, though small lesions of the palpebral mucous membrane often respond well to a strong unscreened application. The statistics are encouraging. Omitting one case in which the application was prophylactic only, and ten so recent that the result cannot be stated, there remain ninety cases. Of these patients, twelve were not improved, six abandoned treatment, thirty-one were apparently cured, and forty-one improved. If it is assumed that treatment was abandoned owing to its want of success, it will be seen that the treatment failed in one-fifth of the cases, succeeded in about one-third and produced improvement in the remainder.

All the patients who applied to the institute were treated. The sarcoma patients are relatively few; twenty-six were treated, of whom nine, or about one-third, were improved, it being said of two of them that they are apparently cured. Among the other diseases treated the most striking results were obtained in keloid and nevus. Of the fourteen cases of keloid or keloid acne treatment, three are reported cured and eight improved, while the treatment was abandoned in the remaining three. One of the chief practical difficulties in the therapeutic application of radium is so to adjust the strength and duration of the application as to avoid a severe reaction. The cause and nature of the reaction have not yet been fully elucidated. Why it should commonly be delayed for two, three or even four weeks, is not clear and no explanation has been suggested. In some cases in which an eroded surface exists the radium reaction proper is, there can be little doubt, complicated and aggravated by septic infection, and it would seem that in some such cases the severe pain suffered during the reaction is in part, at least, due to this cause.

Clinical Journal, London

January 1, XLI, No. 13, pp. 193-208

15 Shock. A. H. Tubby.
16 Diseases of Children. H. T. Ashby.
17 Rational Treatment of Venereal Diseases. J. E. R. McDonagh.

January 8, XLI, No. 14, pp. 209-224

18 Affections of Esophagus. W. C. Bosanquet.
19 Neurology: Sensory Disturbances. C. M. H. Howell.
20 Clinicalia. F. W. Langridge.

January 15, XLI, No. 15, pp. 225-240

21 Fractures. T. H. Openshaw.
22 Neurology: Electrical Testing of Muscles; Lumbar Puncture. C. M. H. Howell.

January 22, XLI, No. 16, pp. 241-256

23 Hilus (and Perl-Hilus) Tuberculosis and Its Sequelae. R. M. Leslie.

72 *Paralysis Following Extension for Fracture of the Femur. (Lähmungen bei Extensionbehandlung von Oberschenkelbrüchen.) M. Weichert.
73 *Operative Treatment of Exophthalmic Goiter. (Zur chirurgischen Behandlung des Morbus Basedowii.) A. Schlesinger.
74 Characteristic Behavior of Frog Eye in Serum from Psoriasis Patients. (Das Ehrmann'sche Froschaugenphänomen im Blutserum von Psoriasiskranken.) A. Sommer.
75 *Diabetic Coma. R. Ehrmann. Commenced in No. 1.
76 Instrument to Aid in Suturing Blood-Vessels. (Instrument zur Erleichterung der Gefässnaht nach Carrel.) E. Jeger.

71. Published in full in THE JOURNAL, Jan. 11, 1913, p. 101.

72. **Paralysis After Extension for Fracture of the Femur.**—Weichert reports five cases of paralysis in men from 22 to 55 years old and one boy of 11 after long extension treatment of fracture of the femur; the paralysis did not subside entirely until a full year had elapsed. He ascribes the paralysis to injury of the trunk of the sciatic nerve from too severe and too prolonged stretching with heavy weights. The weights ranged only from 20 to 30 pounds but the limb was raised so that the leg lay on a slanting plane. The hip joint was thus bent, stretching the sciatic nerve further, so that the moderate weight proved too much for the nerve. This assumption as to the cause of the peripheral paralysis has been confirmed by the fact that such disturbances are no longer observed since the technic has been changed so that extension is applied with the thigh parallel to the bed, thus relaxing the sciatic nerve, while the knee is flexed.

73. **Operative Treatment of Exophthalmic Goiter.**—Schlesinger reviews his experiences in twenty cases and states that it has convinced him that the sudden fatalities after operative treatment of exophthalmic goiter are due to absorption of thyroid secretions. By reducing to the minimum the raw surfaces permitting absorption, it may be possible to ward off trouble from this source. He has become convinced also that it is not necessary to do an extensive operation to accomplish the desired result, but he adds that operative treatment has raised a host of new problems which now await solution. It is better, he thinks, to err on the side of operating too soon than too late. Of his twenty patients three were entirely cured, four immeasurably improved and seven much improved. In two cases the affection returned to a slight extent but it yielded then to medical measures. Three patients were in good condition six months after the operation. In another patient the recurring symptoms were accompanied by much enlargement of the remaining lobe.

75. **Diabetic Coma.**—Ehrmann reports extensive experimental research on coma, stating that he found it possible to induce in rabbits a coma resembling so closely diabetic coma in man that a number of new and previously undescribed elements in the clinical picture were discovered. He elicited the coma in the animals by administration of butyric acid (1-beta-oxybutyric acid and aceto-acetic acid). The butyric acid acts as a severe poison for the brain, affecting in particular the respiration center, vasomotor center and the cerebrum. When the butyric acids act predominantly on the vascular system, a cardiovascular form of coma may be induced. The unmistakably favorable action of sodium bicarbonate in coma is due to its effect in stimulating the elimination of the toxic butyric acids through the urine and also to a direct stimulating action on the nerves of the vessels. The alkali is not able to cure existing coma but it has proved its usefulness in aborting it when given early enough. The facts observed explain the origin of diabetic coma and show the importance of recognizing the action of the poisonous fatty acids on the respiration center in the peculiar low and deep breathing. This should warn of impending coma and permit treatment in time. The toxic action on the respiration center gradually extends to the rest of the central nervous system, with actual coma as the result. The assumption that the brain is predominantly affected by the butyric acid salts is sustained by the fact that in the experiments related the dose needed to bring on coma had to be proportional to the weight of the brain rather than to the entire weight. The small amounts of acetone found in the urine of the animals in coma exclude the assumption that accumulation of acetone is responsible for the development of diabetic coma. The accelerating effect of the sodium bicarbonate on the elimination of the butyric acids is paralleled by the remarkably increased and hastened elimination of salicylic acid which it induces in case of intoxication from salicylic acid. The elimination of the salicylic acid is shortened by one-half under sodium bicarbonate, as Ehrmann has previously stated. He recommended then to give the sodium salts in treatment of salicylic acid poisoning. The facts observed here as also in diabetic coma show that neutralization of the acids by the alkali cannot possibly be the cause of the favorable effects observed. When the toxic action of the butyric acids is felt predominantly in the cardiovascular system, sudden death may follow; this was probably the cause of the fatality in the cases recorded in the literature as "collapse" and "sudden heart death" in diabetics. Coma is therefore a consequence of severe diabetes, that is, accumulation of the fatty acids, such as occurs only in severe diabetes. They injure the vascular system and the diabetic may die of collapse of the vascular system—more cases in this category will be found when greater attention is paid to the blood-pressure in diabetics before coma has developed. The increased excretion of beta oxybutyric acid in the urine after administration of large doses of sodium bicarbonate has been confirmed by a number of investigators, and it emphasizes the importance of the sodium bicarbonate in prophylaxis of coma and also in its incipient phases. In the experimental research reported, intravenous injection raised the abnormally low blood-pressure and the animals roused and ran around; evidently the bicarbonate had a direct stimulating action on the vasa vasorum.

Deutsche medizinische Wochenschrift, Berlin

January 9, XXXIX, No. 2, pp. 49-96

77 The Cancer Problem. (Das Krebsproblem.) E. F. Bashford. Commenced in No. 1.
78 *Calcium Metastasis and Calcium Gout. (Kalkmetastase und Kalkgicht.) M. B. Schmidt.
79 *Swimming-Tank Conjunctivitis. (Chlamydozoen-Befunde bei Schwimmbad Conjunctivitis.) Huntemüller and Paderstein.
80 *Typhoid Bacilli Carriers. (Typhusbazillenträger.) H. Conradi.
81 Abnormally High Blood-Pressure and Sugar Content of Blood. (Hypertension und Blutzucker.) F. Fort.
82 Influence of Salvarsan on the Ear. (Einfluss des Salvarsans auf das Gehörorgan.) E. Rimini.
83 Serpiginous Vaccinia. (2 Fälle von verspäteter Abheilung der Impfpusteln.) Meder.
84 Non-Gonorrheal Ophthalmia Neonatorum. (Ueber nichtgonorrhoische Ophthalmoblennorrhoen der Neugeborenen und Säuglinge.) C. Credé-Horder.

January 16, No. 3, pp. 97-144

85 *The Analytic Method of Reeducating the Muscles in Tabes. (Die analytische Methode der kompensatorischen Uebungsbehandlung bei der Tabes dorsalis.) O. Foerster. Commenced in No. 1.
86 Circulation of Blood in the Lungs. (Die Blutzirkulation in atmenden und atelektatischen Lungen.) O. Bruns.
87 *Tubercle Bacilli in the Bile and Prophylaxis of Tuberculosis. (Untersuchungen zur Tuberkulosefrage.) L. Rabinowitsch.
88 *Diaphragm-Cardiac Neurosis. (Die sexuelle psychogene Herzneurose—Phrenokardie.) E. Behrenroth.
89 *Early Diagnosis of Perforation of the Stomach. (Zur Frühdiagnose der akuten Magenperforation.) D. Kulenkampff.
90 Improved Technic for Staphylococcus Vaccine Therapy. G. Wolfsohn.
91 Vaccine Therapy of Gonorrhea. (Kausale und symptomatische Behandlung gonorrhoischer Prozesse des Mannes mit bes. Berücksichtigung der Original-Gonokokkenvakzine Menzer.) P. Erlacher.
92 *Perforated Capsule Test for Gastric Acidity. (Feststellung der freien Salzsäure im Mageninhalt ohne Magenschlauch.) H. Opitz.
93 *Whitening of Hair and Beard on Side of Hemiplegia Only. (Hemicanities bei Hemiplegie.) S. Loeb.
94 Prostate Elements in Urethrorrhea. E. Pfister.
95 Latent Erysipelas. A. Schlesinger.
96 *Diphtheria Epidemics in School-Rooms. (Klassenepidemien von Diphtherie.) Gettkant.

78. **Calcification of Tissues.**—Schmidt thinks that the term "calcium gout" might be applied to the case he reports in which a woman of 36 had extensive calcification of numerous organs, not restricted to those which are generally regarded as presenting a physiologic predisposition to calcification, namely the lungs, the gastric mucosa, kidneys and preeminently the arteries. It was remarkable that the arteries connected with the pancreas and the uterus were exceptionally affected while those of the thyroid were but slightly and those of the liver

Journal de Médecine de Bordeaux

January 19, XLIII, No. 3, pp. 33-48

57 The Participation of the Brain in Training the Muscles. (Le mécanisme mental de l'éducation neuro-musculaire.) P.-Nadal.

58 *The Mercury Index of the Blood. (Rapports entre l'indice mercurique du sang et la teneur de ce liquide en hémoglobine et en globules.) L. Chelle.

58. **The Mercury Index of the Blood.**—Chelle states that the hemoglobin and corpuscle content of the blood can be estimated by the precipitation which occurs in the blood under the influence of Mayer's reagent plus acetic acid. He does not give the details of the technic, referring to a previous communication, but he tabulates the findings of the index in seven healthy persons and in a large number of patients with various affections. The technic is extremely simple and the index can be used for comparison of the character of the blood as typical for various morbid conditions and thus an aid in diagnosis.

Lyon Médical, Lyons

January 5, XLV, No. 1, pp. 1-48

59 Prophylaxis of Typhoid Fever. (Quelques reflexions sur les divers modes de contagion de la fièvre typhoide. Les meilleurs moyens prophylactiques à leur opposer.) H. Rondet.

Presse Médicale, Paris

January 11, XXI, No. 4, pp. 29-40

60 Congenital Strictures of the Rectum. P. Reclus.

January 15, No. 5, pp. 41-48

61 Different Attitude of Forearm with Various Traumatic Lesions. (Pronation et supination de l'avant-bras dans les lésions traumatiques.) E. Destot.

62 The Platelets in Coagulation of the Blood. (Rôle et importance des plaquettes dans la coagulation du sang.) P. Pagniez.

Revue de Gynécologie, Paris

November, XIX, No. 5, pp. 401-528

63 Non-Malignant Tumors of the Breast. (Tumeurs bénignes de la mamelle.) M. Letulle.

64 Operative Treatment of Torsion of the Large Intestines. H. E. Duroux.

Semaine Médicale, Paris

January 15, XXXIII, No. 3, pp. 25-36

65 *Development of Tumors in Anilin-Dye Workers. (Du développement de neoplasmes sous l'influence de l'industrie des couleurs synthétiques.) S. G. Leuenberger.

65. **Cancer in Urogenital Tract of Workers on Synthetic Dyes.**—Practically the same article was summarized in The Journal, Nov. 30, 1912, p. 2009, with editorial comment Jan. 18, 1913, p. 206.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXV, No. 3, pp. 355-437. Last indexed Jan. 18, p. 248

66 *Kuhn's Aspiration Mask. (Die Kuhnsche Lungensaugmaske.) S. Brotzen.

67 Case of Primary Tuberculosis of the Tubules of the Testicle. (Fall von primärer Tuberkulose der Samenkanälchen des Hodens und des Nebenhodens.) A. Balliano.

68 Development of Susceptibility to Tuberculin in Incubation Stage of Tuberculosis. (Entwickelung der Tuberkulinempfindlichkeit im Inkubationsstadium der Tuberkulose.) K. Dietl.

69 *Fatal Embolism During Artificial Pneumothorax. (Ueber einen in seiner Entstehungsweise eigenartigen Fall von Stickstoffembolie.) Zink.

66. **Kuhn's Aspiration Mask.**—Six years have passed since E. Kuhn, an army surgeon, called attention to the advantages of inducing negative pressure in the lungs as a means of hyperemia, and devised a mask which automatically aspirates the blood from the heart into the lungs. Brotzen here describes extensive application of the mask at the great Beelitz sanatorium near Berlin, and discusses the theories on which it is based and the experiences of others with it. He used the mask on 118 patients; they wore it from fifteen minutes to an hour three times a day while reclining. A number of beneficial effects were observed, slowing of the respiration rate, reduction of the cough, improvement of the appetite and hemoglobin percentage, but the most striking result was the ability to sleep at night. The effect in this line was so striking that Brotzen thinks the mask might prove useful also for sleeplessness in neurasthenia. The mask also influenced very favorably various difficulties in breathing, especially asthma. A number of patients with asthma found that by putting on the mask when they felt an attack impending they could ward it off or abort it. The most striking objective results of the mask treatment were obtained in acute and chronic bronchitis, chronic pneumonia or pleurisy. Fürbringer alone has emphasized this beneficial action of the mask in chronic bronchitis and pleurisy. Brotzen gives the details of thirty cases and then adds a communication from eight patients in turn, describing their own impressions of the mask, their repugnance to it at first, their dislike of the smell of the rubber, but their growing appreciation of the benefit derived and their final enthusiasm for it. Brotzen summarizes his own impressions in the statement that the mask is not only a fine prophylactic but also a fine curative measure, especially in the mild to moderately severe cases of pulmonary tuberculosis and also in acute and chronic bronchitis, asthma, emphysema, chronic pneumonia, chlorosis and pleurisy. [The principle of the mask was described in The Journal, Oct. 15, 1910, p. 1420. It looks like a small muzzle fitting over the nose and mouth. Valves permit unobstructed expiration while inspiration is impeded more or less, and can be regulated. The effect of the impeded inspiration is naturally a negative pressure in the chest; the inspiratory muscles are brought into strong contraction, inspiration is prolonged and the respiration rate lowered. Blood is consequently sucked from the right heart into the lungs, owing to the prolonged negative pressure, while there is no obstruction in the pulmonary circulation to the influx of blood—and in this is the great difference between the passive congestion of heart disease and the hyperemia induced by the aspiration mask. The apparently well attested fact that passive congestion of the lungs from heart disease is a protection against tuberculosis of the lungs, was the starting point, it is alleged, for Bier's hyperemia treatment of surgical inflammation.]

69. **Fatal Gas Embolism During Artificial Pneumothorax.**—Zink's patient was a woman of 40, healthy until the tuberculous process developed in one lung two years before. Necropsy showed that the nitrogen injected under some pressure must have got into some vessel in the soft parts of the thorax as there were no signs of injury of the lungs nor of a pleural vessel in the region where the nitrogen had been injected. Ten or fifteen seconds elapsed between the withdrawal of the needle and the first sign of embolism in the medulla oblongata; the necropsy findings were negative as is usual in gas embolism. If the patient survives the first collapse, various symptoms show the disturbance in the central nervous system. Generally, severe coma comes on without the slightest preliminaries. Occasionally there may be a brief aura in which the patients complain of headache or vertigo or scream as they collapse. No means of resuscitation prove effectual in these acute cases. With a more protracted course, the most frequent and an almost pathognomonic symptom of nitrogen embolism is the marbling of the skin, mostly on the extremities. In Zink's case thjs marbling was on the right forearm and around the puncture hole in the thorax. There was considerable fat around the heart, which certainly cooperated in the fatal outcome; after the first threatening symptoms had subsided the general condition seemed relatively good so that recovery was anticipated. Even the next morning the condition did not seem menacing, until afternoon when the heart showed serious disturbance, refractory to all measures, and the patient died at 8 p. m. About 200 c.c. of nitrogen had been injected, the third injection in four days, and the terminal pressure had been plus 12. Zink does not think that anything was omitted which could possibly have saved the patient except that he might have aspirated out the gas when the first symptoms were observed, but he doubts whether it would not even then have been too late.

Berliner klinische Wochenschrift

January 13, L, No. 2, pp. 49-96

70 Principles of Modern Treatment of Syphilis. A. Neisser.

71 *Intestinal Auto-Intoxication. (Ueber enterogene Intoxikationen, bes. über enterotoxische Polyneuritis.) C. von Noorden.

given moment after the test breakfast, although of course this simple method will never take the place of the more accurate determination by means of the stomach tube.

93. **Sudden Whitening of the Hair.**—In the case reported by Loeb a man of 51 became paralyzed on the left side in consequence of a cerebral hemorrhage and was unable to speak for a week. By the end of this time the moustache, eyebrow and hair on this side had turned entirely white while on the other side the normal color had been retained. Berger has reported two similar cases of the hair turning white on the side of the paralysis, and Loeb regards this material as sustaining the assumption that nervous influences alone are able in certain conditions to turn the hair white suddenly.

96. **Diphtheria in the School.**—Gettkant has arranged it so that the medical inspector of the school the child is attending is notified at once when a case of diphtheria in a child is reported. The medical inspector then makes a point of examining smears from the throats of the children who sit near the seat of the one reported sick and those the sick child has been in the habit of playing with most. By this means he has found it possible to discover unsuspected diphtheria-bacillus carriers, and by excluding these alone from the school-room until they were free from bacilli to stamp out an epidemic in its incipiency. If these measures do not prove sufficient, he has smears made from the throats of all the children in the room, but this is rarely necessary. Bacillus carriers are the main source for epidemics of this kind, he has become convinced.

Medizinische Klinik, Berlin

January 12, IX, No. 2, pp. 45-82

97 *Migraine. (Der migranöse Anfall, seine Kennzeichen, seine Ursachen und sein Wesen unter bes. Berücksichtigung der Wechselwirkung zwischen Migräne und Sexualleben.) G. Caesar.
98 Antitoxin Treatment of Diphtheria. (Klinisches und Kritisches zur Behringschen Antitoxinbehandlung der Diphtherie.) F. Reiche. Commenced in No. 1.
99 *Treatment of Neurosis from Fright. (Zur Therapie der Schreckneurose.) J. Faust.
100 Naphthalin Poisoning. (Fall von Naphthalinvergiftung.) L. Heine.
101 Psychology of Animals. (Die neuere Tierpsychologie.) A. Jacobsohn.
102 Urethral Strictures. (Strikturen der Harnröhre.) E. Portner. Commenced in No. 1.

97. **Causes and Treatment of Migraine.**—Caesar presents evidence to sustain the assumption that migraine is the result of the action of some toxin, and that in all probability the toxin is generated in the perverted functioning of some gland with an internal secretion. The facts cited seem to point to the ovaries as the special gland responsible, especially his clinical experience that migraine often returns with a four weeks' rhythm and very often coincides with the menses, and that the women cease to suffer from migraine with the onset of a pregnancy or lactation while the tendency to migraine seems to disappear permanently with the menopause. In his few cases of migraine in men, the tendency likewise disappeared in them at the age corresponding to the climacteric years in women. The practical conclusion follows that suppression of ovarian functioning might relieve the patients permanently of their migraine. He consequently advises sterilization of the woman in distressing and rebellious migraine, especially elderly unmarried women or those who already have several children. Müller has treated in this way with complete success a patient tormented beyond measure by constantly recurring migraine.

99. **Treatment of Traumatic Neurosis.**—Faust uses the term "fright neurosis" as the shock was from fright and there was not much physical injury in the case he reports. The patient was a locomotive engineer whose engine ran down a wagon on account of a misplaced switch. The man became a "nervous wreck," the breathing extremely abnormal, rapid, with "stuttering inspiration" and deep sighs, pulse up to 120, and tremor of hands and feet, among other symptoms of the fright neurosis. Faust instituted a course of inhibiting exercises, as he calls them, training the patient to study his breathing and for five minutes in each hour reduce the number of inspirations to ten in a minute, counting by the second-hand of a watch, forcibly controlling the tendency to sigh and to "stuttering inspiration." The second week the exercises were done for ten minutes each hour, the third, for fifteen minutes, the fourth, the same sitting up, the fifth, the same standing, the sixth week the same while walking slowly, the seventh, while walking fast, then while climbing stairs, then while carrying a small trunk, then while slowly walking on the street, thirty feet, sixty feet, etc. The patient had to be alone for each exercise so that his entire attention could be focused on it. The second set of exercises was to try to see how long he could lie in bed without making the slightest movement, timing it by the clock. At first ten minutes was the limit. The patient was ordered to lie down for two hours each day and go to bed at 8, and he was told to try to lie perfectly still at first each time he lay down. He finally succeeded in doing this for an hour at noon and on retiring. Writing exercises were given on the same principle. In three or four months the patient had recovered from his neurosis so that he could go as guest or stoker on his locomotive and by the end of the sixth month had resumed his old post apparently entirely capable of filling all the duties connected with it and there has been no further disturbance during the six months since. Faust is convinced that the inhibition exercises are responsible in large measure for the favorable outcome in this case, as in treatment of asthma and of tabes on the same principles.

Münchener medizinische Wochenschrift

January 14, LX, No. 2, pp. 57-112

103 *Sources of Permanently High Blood-Pressure. (Quellen dauernder Blutdrucksteigerung.) K. Schlayer.
104 Abnormally Long and Movable Sigmoid Flexure. (Sigma elongatum mobile—Röntgenbefund.) R. Klenböck.
105 *Transmission of Epidemic Poliomyelitis by Fomites and Flies. (Experimentelle Untersuchungen über die Möglichkeit einer Uebertragung der Kinderlähmung durch tote Gegenstände und durch Fliegen.) A. Josefson.
106 No Benefit from Neosalvarsan in Parenchymatous Keratitis; Seven Cases. H. Hoehl.
107 *Injury of Crucial Ligaments of the Knee. (Verletzungen der Ligamenta cruciata des Kniegelenks.) R. Purckhauer.
108 *Rupture of Liver from Contusion; Two Cases. (Subkutane Leberruptur.) Flath.
109 Pathology of Banti's Disease. P. Grosser and G. Schaub.
110 Bicycle Devised for a Stiff Knee. (Radfahren unter aktiver Beteiligung eines Beines mit steifem Kniegelenk.) O. Harmsen.
111 Bone Conduction of Sound with Normal Hearing. (Kritisches zur Verkürzung der Knochenleitung bei normalen Gehör.) H. Herzog. Commenced in No. 1.

103. **Causes of Permanent High Blood-Pressure.**—Schlayer discusses the various theories that have been advanced to explain a persistently abnormally high blood-pressure, and the premises on which they are based. His own theory, for which he presents an array of evidence, is that the arterial system in these cases has been sensitized by some means, rendering it hypersusceptible to epinephrin in the blood and also to any other toxins circulating in the blood. Clinical observation sustains this assumption. It explains further why simple repose is liable to have such a beneficial influence. The source of this sensitization may be in the kidney, but the kidney changes in these cases may be merely a parallel phenomenon. The practical conclusion is that a permanently high blood-pressure, over 160 mm. mercury, should call attention at once to the kidneys.

105. **Transmission of Epidemic Poliomyelitis.**—Josefson reports positive findings confirming the transmission of this disease by handkerchiefs, sewing and other fomites, but he was unable to obtain positive results with flies. His experiments were made with monkeys.

107. **Injury of the Crucial Ligaments of the Knee.**—Pürckhauer reports three cases in which a long time had elapsed after the accident. In the eight other cases on record the interval between the accident and treatment had been very brief. When the crucial ligaments are torn, the tibia can be pushed forward or backward on the end of the femur. This possibility of subdislocating the tibia in respect to the femur may be the only symptom left of the old laceration of the crucial ligaments. Laceration of the lateral ligaments or capsule rapidly heals, while the crucial ligaments, once torn apart, never grow

and brain not at all. There was also extensive incrustation of the fibers of the myocardium, but there were no signs of disease of the bones. The woman had severe chronic nephritis, and chronic nephritis is almost invariably encountered in cases of this kind, namely, with changes in the calcium metabolism and deposits of calcium at various points. He theorizes to explain the cause for this flooding of the blood with calcium and its deposits in sound tissue, ascribing it mainly to some change in the conditions governing the solubility of the calcium, such as might readily be induced by nephritis or other causes. The local necrosis of tissues observed is probably a consequence rather than the cause of the deposits of calcium. Conditions are thus very similar to those in gout according to the latest conception, namely, that gout is due to a primary disturbance in the metabolism of uric acid with deposits of the salts in sound tissue and secondary necrosis. In the case reported some of the vessels were filled with solid cylinders of calcium, completely closing the lumen.

79. **Swimming-Tank Conjunctivitis.**—The acute conjunctivitis in the fourteen cases described resembled acute trachoma; one eye alone was affected, with two exceptions, and all the patients soon recovered. It proved possible to transmit the conjunctivitis to monkeys. Typical cell inclusions were found, very similar to the chlamydozoa found in trachoma. Most of the patients had always lived in Berlin and the cases were grouped and involved teachers of swimming or members of swimming clubs—all staying unusually long in the water.

80. **Typhoid-Bacillus Carriers.**—Conradi is convinced that endemic typhoid is maintained by the chronic carriers. Even with the intensive measures for stamping out typhoid introduced into southwestern Germany on an extensive scale in the last few years, it has proved impossible to detect all the chronic carriers. Each epidemic, however, was traced to a chronic carrier, and he states that five out of every hundred typhoid patients is left a chronic carrier. Another fact that has been established beyond question is that four times as many women as men become chronic carriers. He thinks that this has some connection with the fact that women are more predisposed to gall-stones than men; possibly the corset and tight clothes interfering with the circulation may explain the prevalence in women. He states that his experimental and clinical research to discover some way of sterilizing the carriers has failed of results. The only thing that can be done is the constant reminding of chronic carriers of the necessity for care and foresight. Measures for disinfection should be advised exactly the same as for typhoid patients. But his eight years of service in fighting contagious diseases has left him with no illusions as to the carrying out of these measures. This much is known, however, he adds, that the causes of endemic typhoid have now been revealed.

85. **Reeducation of the Muscles in Tabes.**—Foerster gives forty-five illustrations to aid in explaining the analytic method of compensatory exercises to restore coordinated muscular action in tabetics. By sifting out the exact muscles involved in each movement and training these in turn it is possible to accomplish wonders in restoring normal movements.

87. **Tubercle Bacilli in the Bile.**—Rabinowitsch expresses surprise that so little attention has been paid to the statement of Fraenkel and Krause over ten years ago that they found tubercle bacilli in the bile in five out of eleven tuberculous cadavers, that is, in 45 per cent. She has recently examined seventeen cadavers, all with more or less advanced tuberculosis except one in which there was only a calcified mesenteric gland. The intestine was involved in eleven cases, including one with a liver process. Inoculation of guinea-pigs with the bile gave positive results in 70 per cent., showing the danger of infection of others from bacilli in the stools as they may come from the bile as well as from swallowed sputum. The bacilli cultivated from the lungs were all of the human type, but those cultivated from the gall-bladder in six cases were of the bovine type in two. She thinks that these findings confirm the assumption of transmutation of one type into another. The tubercle bacilli infecting the body may persist in the original type in one organ while conditions in another organ may modify the type. It seems plausible to assume that bovine infection in children persists in a latent form until the bacilli become modified into the human type—this would explain why the bovine type may be prevalent in children while the human type is almost invariably encountered in adults. The fact that this transmutation outside of the organism has only rarely been observed in experimental research (O. Bang, Eber, Bongert) does not conflict with this assumption. Nature will not let herself be driven. The practical result of the research reported is a warning against the danger of elimination of tubercle bacilli in the feces from the bile, both in human beings and in cattle. A cow reacting to tuberculin without any apparent disease may infect the milk by bacilli in her feces. The importance of examination of the feces for tubercle bacilli in animals is emphasized by Fraser's recent report that he found infection of the bovine type in 60 per cent. of sixty-seven children with surgical tuberculosis at Edinburgh. Orth declares that if every tubercle bacillus of the human type could be annihilated at one stroke, yet all the measures in vogue against tuberculosis would have to be kept up just the same as long as bovine tubercle bacilli can be transmitted from animals to man.

88. **Phrenocardia—a Psychogenic Cardiac Neurosis.**—Behrenroth discusses the syndrome described by Herz in 1909 as a diaphragm-heart neurosis or phrenocardia. The symptoms are pain below the left nipple, difficulty in breathing and palpitation, with other nervous phenomena. The pains may be sharp and transient or may persist as a dull ache with exacerbations. Erb has encountered fifteen patients with the typical syndrome and ten others with a suggestion of it among 450 cases of neurosis, and Behrenroth has observed nineteen among 370 patients with nervous heart disturbances. The patients were mostly between 25 and 30 years old, the syndrome never being observed in the children or elderly. It is described in detail with the various modifications observed. The origin is generally the same in all cases: unsatisfied sexual longings, disappointments of all kinds. In the majority of cases anomalies, rather than excesses, in the sexual sphere are responsible for the phrenocardia, and treatment is effectual if the cause can be done away with in addition to the measures which have proved their usefulness in cardiac neuroses of other kinds. The transient use of bromids, valerian or other sedatives may help.

89. **Early Diagnosis of Perforation of the Stomach.**—Kulenkampff calls attention to tenderness in the pouch of Douglas as a very early sign of perforation of the stomach. The discovery that the Douglas is sensitive to pressure transforms at once a dubious into a certain diagnosis of perforation of the stomach wall. In a case reported the perforation occurred at 5 p. m. and the patient had eaten nothing since breakfast. The acid gastric juice probably has a more irritating action than intestinal contents, which explains the extreme tenderness at the point where the stomach contents flow down and accumulate, namely, in the lower part of the pouch of Douglas. Two other patients with contusion of the abdomen did not have this tenderness in the pouch of Douglas although there was much accumulation of blood. This point is the only one where the peritoneum can be directly palpated without opening the abdomen, and hence the discovery of tenderness here is extremely instructive in case of a dubious diagnosis.

92. **Perforated Capsule for Testing Gastric Acidity.**—Opitz has been much pleased with the accuracy and reliability of the information derived from congo and litmus paper enclosed in an oval rubber capsule about 1.5 cm. long by 0.5 cm. wide, studded with perforations and made in two parts which screw together. A silk thread is fastened to one end of the capsule, and a nickel ring is enclosed with the two scraps of paper to add weight. To prevent any interference from the saliva, the capsule is loosely wrapped in a wafer and is placed far back on the tongue so that it is swallowed at the first movement of deglutition. After a given time it is drawn out by the string, unscrewed, and the change of tint in the test papers compared with a color scale. By this means it is possible to estimate the amount of free hydrochloric acid in the stomach at a

the donor are tabulated in detail, and show the prompt improvement in the blood count after the injection, while the general health improved to correspond. The connection between the injections and the increase in number of blood-corpuscles was beyond question, but how to explain the benefit is still a problem. Intramuscular injection of defibrinated human blood is stated to be free from all danger. No untoward by-effects were noted in any instance. The absolute harmlessness of the method, its simplicity and painlessness render it superior to intravenous transfusion of blood, which, as every one knows, is neither simple nor harmless. The blood was obtained from puncture of the median vein from robust pregnant women with negative Wassermann. The blood was drawn in an Erlenmeyer jar and shaken up with beads until it was defibrinated and then from 20 to 30 c.c. was injected at once into the patient's buttocks. The injections were repeated as needed, at intervals of three or four days. The blood of both patient and donor was examined anew each time for hemoglobin content and the number of red and white corpuscles. In the first case the patient was a woman of 48 with anemia from hemorrhagic cancer of the uterine cervix. The hemoglobin was 25 per cent., the reds 1,450,000, and the whites 3,000. After five injections of the blood in two weeks the hemoglobin was 35, reds 3,800,000 and whites 5,400 a month later.

Zentralblatt für Chirurgie, Leipsic

January 11, XL, No. 2, pp. 41-80

130 *Condom for Draining Ascites. (Dauerdrainage stagnierender Ascitesergüsse in das subkutane oder retroperitoneale Zellgewebe mit Hilfe von Gummi- oder Fischblasenkondoms.) K. Henschen.
131 Fascia Grafts. (Zur Verwendbarkeit der freien Fascientransplantation.) A. Neudörfer.
132 To Cover Defects in Skull and Dura. (Ersatz von Schädel- und Duradefekten.) V. v. Hacker.
133 Pyelotomy with Incision of Anterior Wall of Kidney Pelvis. v. Illyes.
134 Technic for Removal of Foreign Bodies. R. and F. F. Stoltzenberg.

January 18, No. 3, pp. 81-120

135 Amputation Below the Knee Instead of Exarticulation. (Die osteoplastische epiphysäre Amputatio tibiae sub genu als Ersatz für die Exartikulation im Kniegelenk.) F. Franke.
136 Technic for Appendectomy. (Operative Mobilisierung des Coecum bei der Appendektomie, sowie Ausschaltung des Wurmfortsatzes.) Krüger and F. Neugebauer.
137 Loofa Sponges in Laparotomies. (Verwendung des Luffaschwammes bei der Laparotomie.) A. Thies.

130. **Condom for Drainage of Ascites.**—Henschen discusses the various methods that have been devised for permanently draining the ascitic fluid into the subcutaneous or retroperitoneal cellular tissue, commenting on the drawbacks of each. Then he describes a method he applied recently to a man of 57 in advanced cachexia from cancer of the stomach with profuse effusion in the abdomen, the girth being 90 cm. or very nearly two yards. After tapping the patient and failure of two efforts to provide permanent drainage, Henschen made a tunnel through the abdominal wall, working toward the median line from an incision above the left spine of the ilium. The mouth of an ordinary rubber condom was then sutured to an opening in the peritoneum, the condom drawn out through the tunnel in the abdominal wall and the closed end cut off, leaving it projecting the width of a thumb above the plane of the aponeurosis of the externus. This projecting end was then spread out into a ring and sutured to the aponeurosis of the externus, inside the pocket that had been made in the skin. The lateral-convex skin flap was then replaced and sutured. The immediate result was the development of extensive edema in the region and around to the middle of the back, but the ascites thereafter was kept within bounds and the disturbances on the part of the lungs and heart from the pressure of the fluid in the abdomen subsided entirely. Severe cancer ascites with multiple metastatic nodules thus kept under control by the technic described testifies with exceptional emphasis to the value of the method. There is no reason to doubt that the drainage will persist unimpaired. It is important to choose carefully the point where the drain is to be applied to utilize the physical forces, and Henschen thinks that the most suitable place is the region above Poupart's ligament or as far to the side as possible in one of the lumbar recesses. Another precaution that must be taken is to see that there is no loose omentum that might obstruct the condom drain tube; it may be necessary to suture the omentum out of the way or draw a wisp into a second tunnel made for the purpose. It might be possible to introduce the condom through a lumbar incision and drain the effusion into the retroperitoneal cellular tissue. A rubber or fish-bladder condom can be readily sterilized, the former by boiling and the latter by Hofmeister's method of sterilizing catgut.

Zentralblatt für Gynäkologie, Leipsic

January 11, XXXVII, No. 2, pp. 49-88

138 Time Relations Between Corpus Luteum Production and Menstruation. R. Meyer and C. Ruge.
139 *Correction of Contracted Pelvis. (Verfahren zur Heilung enger Becken.) H. Rotter.

January 18, No. 3, pp. 89-120

140 *Vomiting of Pregnancy. (Zur Hyperemesis gravidarum.) M. Stolz.
141 Chair for Extradural Anesthesia. (Kippstuhl zur Ausführung der hohen extraduralen Anästhesie.) H. Schlimpert.
142 *Improved Technic for Venesection in Eclampsia. (Zur Behandlung der Eklampsie.) M. Zondek.
143 *Climacteric Hemorrhages and Prophylaxis of Cancer. F. Lehmann.

139. **Enlargement of Pelvis by Resection of Promontory.**—Rotter reports that he has applied in a clinical case the method of enlarging a rachitic contracted pelvis by chipping off the anterior part of the promontory, which he has worked out on the cadaver as described in THE JOURNAL, May 11, 1912, p. 1487. The patient had passed through eight pregnancies but the child had succumbed during or soon after the difficult delivery each time. The woman was 32, healthy and normal in other respects and very anxious for a living child. Four months after the last delivery the operation was done under chloroform, Trendelenburg position, the incision on the median line extending from the symphysis to the umbilicus. The intestines were pushed upward, the sigmoid flexure to the left. The peritoneum over the promontory was incised for 6 or 7 cm. and the soft parts pushed out of the way. The sacral artery was ligated 2 cm. above the promontory with a Dechamps needle. Then the promontory was resected with a 4 cm. wide, slightly concave and very sharp chisel, with a smaller chisel for the edges. A few strokes of the hammer answered the purpose. The subperitoneal fat tissue was then sutured over the spot with two catgut stitches, then the parietal peritoneum and the abdominal wound. There was no bleeding from bones or soft parts, and the wound rapidly healed so that the patient could get up the tenth day and was free from pain, and there were no disturbances even on bending and stretching the trunk. Seventeen days after the operation, in place of the promontory, could be felt a smooth flat surface. The portion of the promontory removed was part of the lower lumbar vertebra, intervertebral ligament and part of the first sacral vertebra, the whole being about 1.5 cm. thick. By this means the pelvis has been permanently enlarged by ⅝ inch, which no other method to date has been able to accomplish. The question is now whether callus will develop enough to compromise the effect realized; periosteal callus cannot form as the periosteum was removed with the bone, and fat tissue was sutured over the spot, and, on the other hand, as there was no accumulation of blood in the region, no clot was left to feed a callus and attract calcium salts. Consequently, he is theoretically confident there will be no callus production. In future cases he will chisel off a little thicker piece, possibly 2 cm., which will transform the contracted into a normal pelvis. It might be possible to do this simple operation during the first three months of a pregnancy, but he thinks the advantages are all on the side of the prophylactic operation, not waiting for a pregnancy to be under way. The drawback of having performed an unnecessary operation—in case the woman does not become pregnant—is far outweighed by the other advantages of this method. To wait to do the operation until cesarean section becomes necessary is not advisable, as this leaves a far from normal uterus for future pregnancies, but Schmid recently reported a case of this kind.

together again spontaneously, or at least never regain their old elasticity. It is important to suture the torn ligaments as soon as possible. In very old cases suture is scarcely advisable. The disturbances in one of his patients were so slight that no treatment was necessary. In another case he corrected conditions to prevent the subdislocation of the tibia, and thus freed the patient from all disturbances.

108. **Rupture of the Liver from Contusion.**—In the first of Flath's two cases the tissues were too friable for suture but the lesion healed promptly under firm tamponing. The necessity for a prompt laparotomy when rigidity of the abdominal wall indicates internal injury, is reiterated anew.

Therapeutische Monatshefte, Berlin

January, XXVII, No. 1, pp. 1-96

112 Treatment of Gonorrhea. (Behandlung der Gonorrhoe und ihrer Komplikationen.) C. Bruck.
113 *Choice of Foods in Disease. (Wahl von Nahrungsstoffen in Krankheiten.) C. von Noorden.
114 *Chronic Tonsillitis. (Radikale Tonsillektomie oder konservative Behandlung der chronischen Tonsillitis?) H. Pässler.
115 Duodenal Sound in Treatment of Pylorospasm. (Zur Behandlung des Pylorospasmus—Pylorussondierung.) H. Putzig.
116 Pulverized Vegetables. (Bedeutung physikalisch fein verteilter Gemüse für die Therapie.) G. v. Bergmann and F. W. Strauch.

113. **Choice of Foods in Disease.**—This article was read in the section for dietetics at the recent International Congress for Hygiene. Von Noorden discussed in particular the diet in obesity, in forced feeding, in gout, diabetes, fever, exophthalmic goiter—classing the two last together—gastro-intestinal morbid conditions and kidney disease. He remarks that sometimes he has found that patients may be able to digest meat or carbohydrates, either alone, but not both together. His clinical observation teaches that in many cases the patients do better with monosaccharids than with disaccharids, such as milk-sugar and cane-sugar. The monosaccharids (glucose, galactose and levulose) are absorbed too rapidly to afford a culture medium for bacteria. It is interesting, he adds, that in the old Mosaic writings it is forbidden to eat meat and milk together. He refers also to a rare affection attendant on chronic constipation: The patients complain of wandering pains in the most diverse nerve regions, and the pains are generally ascribed to rheumatism or gout. More careful investigation will show, however, that it is an elective neuritis, affecting only the sensory nerves, and four or five times the normal proportion of indican is often found in the urine. All attempts to cure the neuritis directly by hot baths, electricity, etc., are bound to fail as they do not attack the cause of the neuritis. This is the influence of poisons generated in the constipated intestines, and a cure promptly follows when the abnormal conditions in the intestines are corrected. This may require some time. Some of his patients were kept for weeks on milk or yoghurt without meat before the bacteria causing the abnormal conditions had died off.

114. **Chronic Tonsillitis.**—Pässler is convinced that chronic tonsillitis is seldom if ever a harmless local affection. It is an important factor not only in articular rheumatism and chorea but in erythema nodosum, dyspeptic conditions, mild sciatica, acute or subacute, recurring nephritis and chronic endocarditis and myocarditis. He urges the necessity for examining for disease in the nose, ears and teeth as possibly involved in the tonsillar process. He removes the tonsils in any of these diseases which drag along or recur. No certain cure can be realized except by radical tonsillectomy.

Wiener klinische Wochenschrift, Vienna

January 16, XXVI, No. 2, pp. 41-88

117 *Etiology of Epidemic Poliomyelitis. (Aetiologie der Kinderlähmung.) C. Kling.
118 Benzol in Treatment of Leukemia and Other Blood Diseases. A. Pappenheim.
119 Skin Reaction in Syphilis. O. Fischer and E. Klausner.
120 Prognosis of Tuberculosis in Infants. R. Lawatschek.
121 Impalement Accidents. (Pfahlungsverletzungen.) F. Orthner.
122 *Embryonal Cells as Cause of Cancer. (Neue Versuche zur Erzeugung von Geschwülsten mittels arteigener und artfremder Embryonalzellen.) G. Kelling. Commenced in No. 1.

January 16, No. 3, pp. 89-124

123 *Dorsal Auscultation of the Heart and Vessels. L. Kürt.
124 Action of Induced Radio-Activity. Fernau, Schramek and Zarzycki.
125 *Injection of Blood in Anemia. (Zur Bekämpfung der Anämien durch intramuskuläre Injektionen von defibriniertem Menschenblut.) J. v. Zubrzycki and R. Wolfsgruber.
126 Twofold Ileus After Herniotomy. (Seltene Komplikation nach der Herniotomie einer eingeklemmten Ileustenhernie.) H. Finsterer.
127 Balneotherapy in Kidney Disease. (Zur Balneotherapie von Nierenleiden.) E. Pflanz.
128 No Benefit from Neosalvarsan in Parenchymatous Keratitis; Ten Cases. E. Bachstez.
129 Alcohol and Homosexuality. H. Deutsch.

117. **Epidemic Poliomyelitis.**—Kling reports extensive research on the virus and mode of transmission of infantile spinal paralysis. He found that 78 per cent. of the monkeys contracted the disease after inoculation with water in which organs and mucous membranes from poliomyelitis cadavers had been rinsed. All the animals inoculated with spinal cord died of poliomyelitis. The virus was found constantly in the secretions from the nose and throat and in the intestinal content of acute poliomyelitis patients, also in those with light, abortive cases of the disease and, further, in numbers of healthy contacts. The virus generally soon loses its virulence, so that isolation need not be kept up for more than two weeks although the virus was found in the nasopharynx up to seven months in a few of the cases examined, and also in the abortive cases and healthy contacts. He thinks it probable that each case and each abortive case is surrounded with a number of carriers but serious epidemics do not result as the persons exposed are not susceptible. It seems to be the rule that a region where a disease has once been epidemic, is spared further inroads of the disease later, indicating that a large part of the population had become immunized by having had the disease in an attenuated form. This rule is particularly evident in the large cities where the people are exposed to so many diseases and contract them in a mild, clinically not appreciable, form during the course of a mild epidemic. Then, when the disease returns at some later period in a more malignant form, the populace is protected. In rural districts there is not the same opportunity to acquire immunity, and when an epidemic occurs it befalls large numbers of non-immunes and is liable to run an exceptionally severe course.

122. **Cancer Research with Embryonal Cells.**—THE JOURNAL has summarized a number of Kelling's communications on the possibility of malignant disease being the result of the independent proliferation of some alien embryonal cell lodging in the tissues. With gastro-intestinal cancer the embryonal cells from eggs, helminths, etc., may be involved. His views suggest a rational prophylaxis of cancers, as he explains in detail, by avoiding all natural embryonal cells, raw meat, raw eggs, green vegetables possibly contaminated with helminth ova, and contaminated water. Intestinal parasites should be systematically eradicated and the bites of insects should be guarded against. Another point he emphasizes is that an excess of albumin had better be avoided; especially with gastro-intestinal disease let the intake of fluid albumin be restricted, as the reaction of the embryonal cell to alien albumin seems to be an important factor in the development of cancer.

123. **Dorsal Auscultation of the Heart and Large Vessels.**—Kürt gives minute directions for interpreting the findings, remarking that in normal conditions the heart sounds can be heard at the back almost invariably in children but less constantly in adults. The diastolic murmurs with aortic insufficiency of syphilitic origin are unusually loud and rough. They are heard most pronounced on a level with the first or second spinous process of the thoracic vertebrae.

125. **Intramuscular Injection of Blood to Combat Anemia.**—Esch published in 1911 the successful application of this measure, as mentioned in THE JOURNAL at the time, Nov. 25, 1911, p. 1807. The measure has been applied at Wertheim's clinic at Vienna in six cases and the results are stated here to have been remarkably favorable. All the patients had lost large amounts of blood and the reds had dropped to less than two millions in most. The blood-findings in both the patient and

140. Uncontrollable Vomiting of Pregnancy.—Stolz recommends treatment along the lines of Stroganoff's prophylactic treatment of eclampsia, that is, to keep the patient systematically under the influence of narcotics and sedatives until she has been tided past the stage of hypersensitiveness. Stolz keeps the patient in bed, shielding her from every external impression and allowing only cold, easily digested food in small quantities, stimulating diuresis to eliminate the poisons by regular and prolonged saline enemas, and keeping the bowels open. In the first of the two cases reported, he kept the patient, a iv-para of 24, under the influence of opium. A suppository containing 0.03 gm. of opium was introduced into the rectum three times a day, and by the end of eight days the tendency to vomiting had been conquered. The vomiting began at the end of the fourth week of pregnancy and resisted all other measures. In another case the suppositories were used for three weeks, gradually reducing to one at night as the morning vomiting was the last to yield.

142. Treatment of Eclampsia.—Zondek describes a method of venesection involving the kidney alone. Stripping off the capsule from a venous congested kidney droplets of blood can be seen oozing from its surface along with droplets of lymph. There is thus a blood-letting and lymph-letting. By twisting the kidney a trifle on its pedicle, the venous hyperemia can be increased. He has experimented only on animals, but he thinks this method of local venesection may possibly be applied in the clinic, especially in the treatment of eclampsia. He suggests further that the benefit which has been reported in a few cases from decapsulation of the kidney in eclampsia may have been due to an unintentional venesection of this nature.

143. Climacteric Hemorrhage and Prophylaxis of Cancer.—Lehmann states that when women who come to him with inoperable cancers are asked why they did not apply for medical aid sooner, the response is invariably that they thought the hemorrhages observed were a natural phenomenon of the change of life. He urges that the laity should be taught insistently that the menopause is merely the gradual subsidence of menstrual hemorrhages, the losses of blood grow less and less and occur at longer intervals; any increase in frequency or amount should arouse alarm as a sign of malignant disease.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 12, XXXIV, No. 5, pp. 41-56

144 *Simple Ferment Test of Liver Functioning. (Nuovo procedimento per la diagnostica funzionale del fegato.) G. Ghedini.

January 14, No. 6, pp. 57-64

145 Hysteric Joint Affection Simulating Chronic Arthrosynovitis. G. De Lucchi.

144. Polarimeter Test of Liver Functioning.—Ghedini gives a description of the dozen different methods in vogue for functional diagnosis of the liver, and comments on the drawbacks of each and the necessity for some more reliable technic. He then calls attention to a polarimetric test which shows the presence in the blood-serum of the ferment which is the product of the living liver cell. This ferment is able to reduce glycogen into maltose, isomaltose, glucose, etc. The presence of this ferment in the blood-serum of animals has long been known and in man it has been found in both blood and urine except when elimination by the kidneys is impeded. Ghedini has been investigating its presence by the polarimetric method and found it invariably present in comparatively large amounts in persons with sound livers while it was scanty or absent altogether in those with liver disease. He adds 2 c.c. of blood-serum to a vessel containing 10 c.c. of a 1.5 per cent. solution of glycogen. The turbid fluid is rendered limpid by addition of a couple of drops of a solution of sodium hydroxid. After standing half an hour at 37 C., he adds twice the volume of potassium sulphocyanid and shakes until the salt is entirely dissolved. This salt has the property of clearing up mixtures of serum and other organic products (Porges and Neubauer, Ghedini) in combination with glycogen without affecting the rotation of the plane of polarized light. The deflection of the polarized light is then compared with that with a test mixture of the glycogen solution and physiologic serum. If the polarized light is deflected less than with the physiologic serum mixture the conclusion is evident that part of the glycogen has been reduced to glucose, and the proportion corresponds to the extent of the rotation of the plane of polarized light. He summarizes the findings of this test in nineteen persons with various forms of liver disease of different grades of severity. Parallel tests with other methods confirmed the findings, and he thinks this simple method has a future as a reliable and delicate means of determining both qualitatively and quantitatively the functional capacity of the liver. The test is applied to the blood, which is less subject to secondary influences from other organs than other media, while the technic is free from certain factors which detract from the reliability of other methods.

Medicina Contemporanea, Lisbon

January 5, XXXI, No. 1, pp. 1-8

146 Pleurisy. (Sobre pleurisias.) B. Moraes.

147 Massage in Gynecology. (A kinesotherapia em gynecologia.) P. de Miranda.

Hospitalstidende, Copenhagen

January 8, LVI, No. 2, pp. 25-48

148 Solubility of Uric Acid in Connection with Proportion of Ethereal Sulphates in the Urine. (Urinsyrens Dannelse hos Mennesket.) I. P. Chrom.

January 15, No. 3, pp. 49-72

149 Laminectomy for Fracture of Vertebra, with Necropsy. (Et Tilfælde af Fractura vertebræ cervicalis V, behandlet med Laminectomi.) S. and J. Nordentoft.

Ugeskrift for Læger, Copenhagen

January 16, LXXV, No. 3, pp. 83-119

150 *Chronic Gastric Ulcer Near the Pylorus. (Det kroniske juxtapyloriske Mavesaar.) K. Faber.

150. Chronic Ulcer Near the Pylorus.—Faber expatiates on the recurring attacks of spasm of the pylorus which are characteristic of ulceration in either the stomach or duodenum when it is close to the pylorus. When this recurring spasm of the pylorus is observed during or notwithstanding correct medical treatment, he advocates an operation without further delay. A gastro-enterostomy does away at one stroke with the irritation of the ulcer by the passage of food over it, and the patients are relieved from all disturbances from this source although they must regulate their life afterward to correspond to this anomaly and certain persons, especially those inclined to nervousness, may have more or less trouble from it. The hope of a cure of the chronic ulcer by medical measures alone should not be abandoned until after several energetic and persevering courses of medical treatment. He has witnessed remarkable cures by this means, even with a juxtapyloric ulcer. But when all this fails, a gastro-enterostomy may transform conditions as if by magic. Pain and nausea soon after a meal are not always a sign of ulcer; they may be of purely functional origin. But pain developing an hour after the meal is more characteristic. The pain coming on several hours after a meal and relieved by taking food, the so-called hunger pain, is regarded by many as characteristic for duodenal ulcer alone, but in Faber's experience this accompanied ulceration in the stomach itself as often as in the duodenum. Free hydrochloric acid does not become evident until after several hours, and thus its corroding action is not felt until then. In one case described in detail the patient was a woman of 31 with dyspeptic disturbances for eighteen years and signs of an ulcer during the last five, with hematemesis, indicating that the ulcer was probably in the stomach. She never had any pain during or after eating until four or five hours had elapsed. While she was under treatment she had two pronounced attacks of severe spasm of the pylorus with great retention, vomiting and hypersecretion—a typical example of Soupault's "pyloric syndrome" in its most pronounced form, what used to be called Reichmann's disease. In a second similar case the symptoms were practically the same except that the patient had had melena twice. Both patients were freed from their chronic trouble by a posterior gastro-enterostomy with complete success during the several months since.